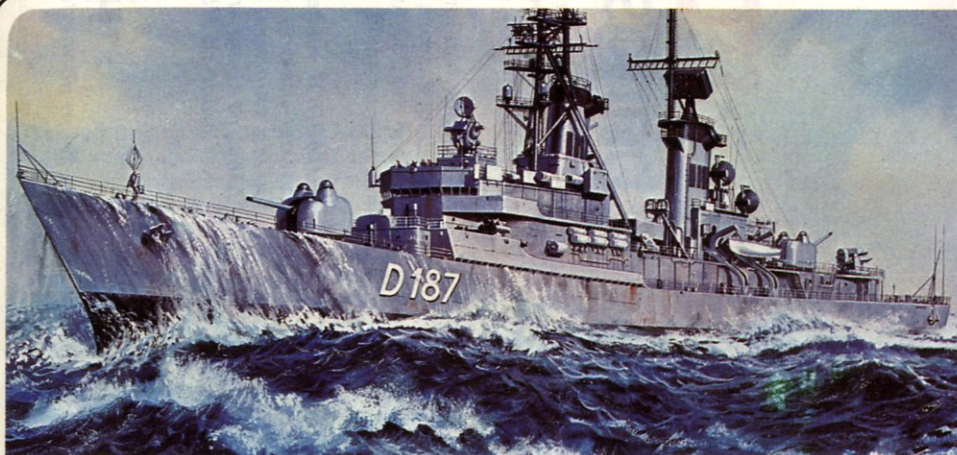




May 1976 30p

magazine for plastic modellers

Inside: The Mustang in action, a week with the Air Training Corps, and modelling a Kirby Cadet Mk 3 glider



Modelling Lutjens
Class destroyers



Finnish tanks
of World War 2



The Royal American Regiment 1797-1806



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magazine for plastic modellers

Editorial Director **Darryl Reach** Editor **Bruce Quarrie** Art Editor **Tim McPhee**
Editorial offices Bar Hill, Cambridge CB3 8EL. Telephone *Crafts Hill 80010*

On the cover

Top left Boxtop artwork from Airfix's 1:600 scale kit of the FGNS *Rommel* destroyer, modelling details for which are provided on pages 514-516. **Bottom left** Finnish KV-1 tank preserved in the Parola museum (via *Karl Haugsted*). See pages 519-525 for details. **Right** Superb illustration by Bryan Fosten, specially drawn for *Airfix Magazine*, depicting an officer of the 60th Foot, circa 1797, as described on pages 506-7. Based on the miniature of Lieutenant Woolf.

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(Productions) Ltd, Publishing
Department, 136/142 New Kent Road
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Airfix Magazine is published for the proprietors, Airfix Products Limited, by PSL Publications Limited, on the fourth Friday of each month. Annual subscription rate £5.10 (USA \$12.00) from Surridge Dawson & Company (Productions) Limited. Second Class postage paid at New York Post Office, NY.

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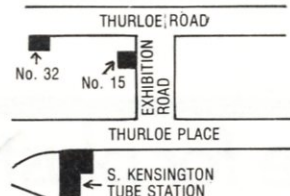
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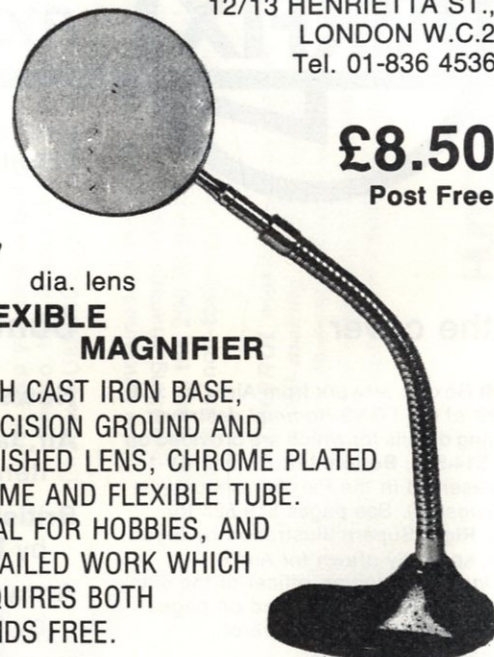
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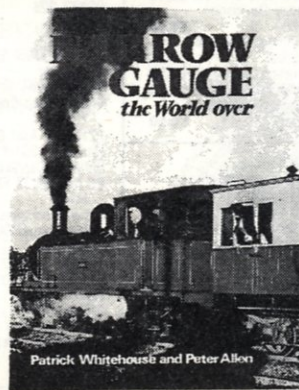
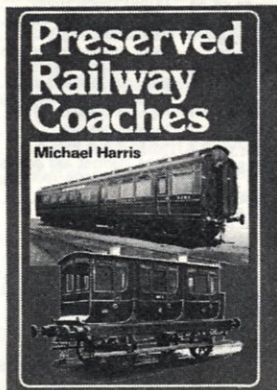
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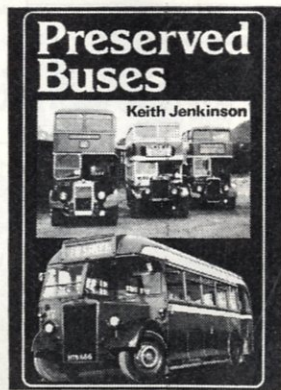


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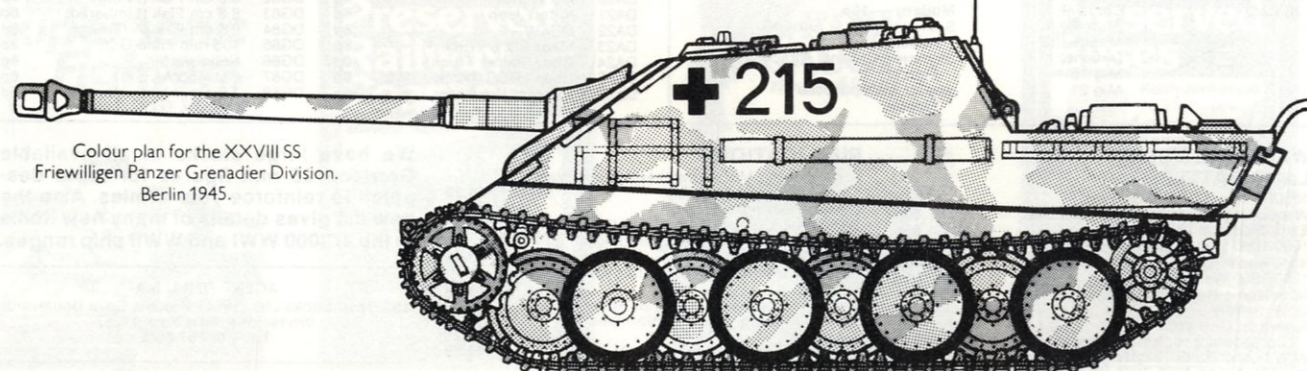
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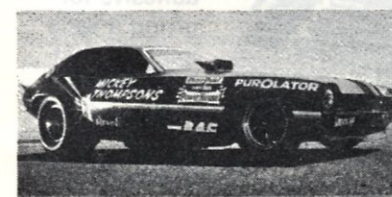
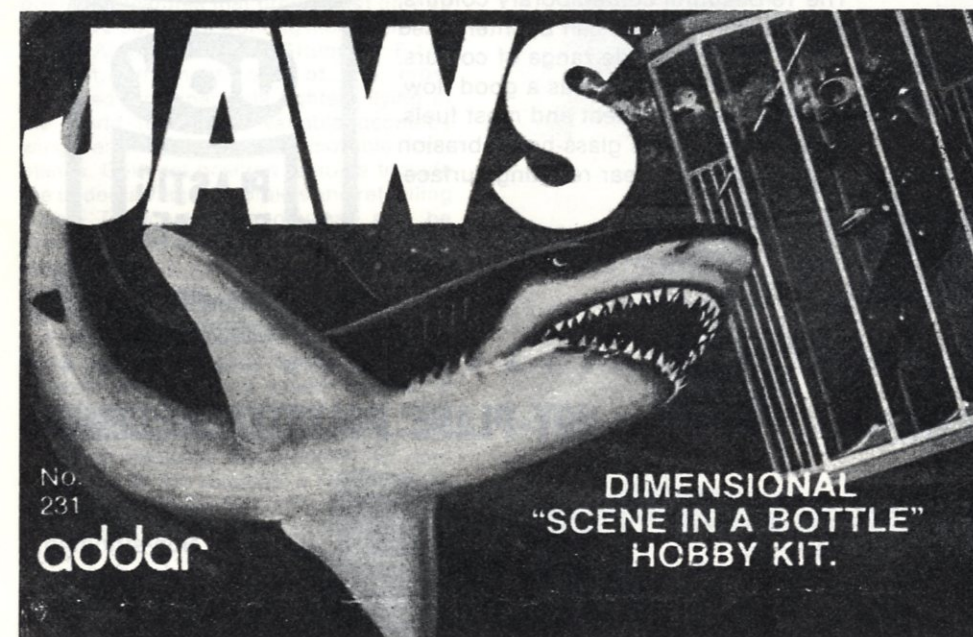
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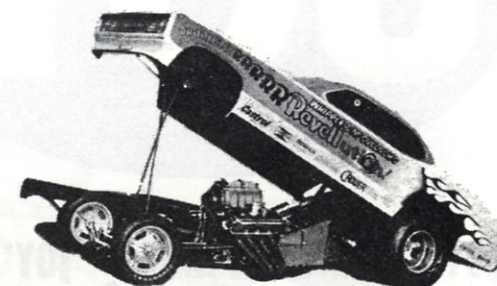
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NEWS FROM AIRFIX

- 1 Grumman Tomcat
- 2 Bugatti Type 35B
- 3 Kit catalogue

1

AIRFIX HAS just introduced a highly detailed kit of the Grumman F-14A Tomcat in 1:72 scale that strongly emphasises the company's reputation for authenticity.

Moulded in white plastic, there are 110 parts producing many interesting and operating features that provide not only an attractive but also a working model aircraft.

The Airfix kit of the Grumman F-14A Tomcat, which is one of the most advanced air superiority fighters flying in the world today, has variable geometry wings and tailplanes with movable foreplanes. Optional position features include the undercarriage, air brakes and refuelling probe. The cockpit canopy can also be assembled in a closed or open position, the latter revealing extensive cockpit detail, including two crew members and miniature ejection seats.

A comprehensive armament load is supplied, comprising four Sparrow and six Phoenix missiles in a varied number of combinations.

The kit also contains optional transfer markings allowing the modeller to construct one of two versions: a Tomcat of US Navy Squadron VF-1 or VF-2, the first two USN units to operate the aircraft. Price is £1.05.

2

A NEWLY introduced kit from Airfix superbly reproduces the features of one of the world's classic racing cars — the Grand Prix Bugatti Type 35B. Scaled from an original car by Airfix engineers, the Bugatti 35B in 1:32 scale is moulded in blue polystyrene, comprising 104 pieces with highly detailed body and suspension units and a driver figure in period racing attire. Transfers are supplied allowing one of two versions to be built — a road racing version and a Grand Prix racing version. Optional items also provided include mudguards for the road racing version.

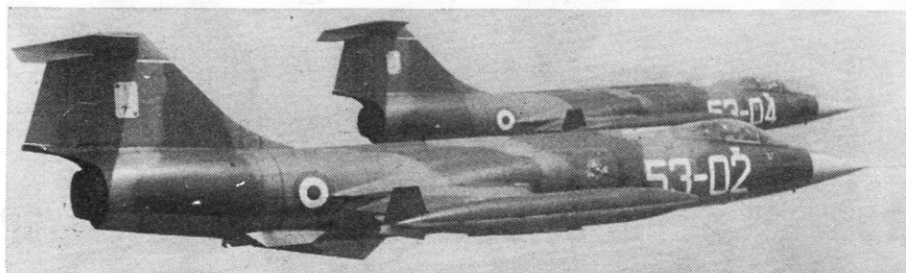
The 2.3 litre supercharged Bugatti 35B is a later version of the Type 35, of which 2,000 were manufactured between 1924 and 1931. Featuring cast aluminium wheels with eight flat spokes and a superbly finished body tapering from the tail, it was driven in its heyday by such well-known personalities as Louis Chiron, Malcolm Campbell and Tazio Nuvolari. Retail price is 59p.

3

THE LATEST edition of the Airfix catalogue

(old editions of which are rapidly becoming collectors' items) contains no fewer than 80 full-colour pages illustrating available kits and some of those which will become available during 1976. It costs 30p from your local model shop or, in case of difficulty, can be ordered for 40p including postage from: Airfix Products Ltd, Dept NR, Haldane Place, Garratt Lane, London SW18 4NB.





Two F-104Ss of 21° Gruppo, 53° Stormo, Italian Air Force, based at Cameri (Aeritalia).

Italian F-104s

IT IS NOW over 22 years since the prototype F-104 Starfighter made its first flight. However, the type continues in production, with the F-104S variant being built by Aeritalia (formerly Fiat) in Italy. 205 F-104Ss for the Italian Air Force are now almost complete, and 18 of these were diverted to the Turkish Air Force, who confirmed an option for a further 18 aircraft last year.

In addition to the F-104S programme, Aeritalia are involved in a number of other aircraft projects. Largest machine under construction is the G 222 twin-engined military transport, and 44 of these are planned for the Italian Air Force, to replace the venerable C-119. The Argentine Government has ordered two G 222s with a third on option.

Aeritalia have a 15 per cent share in the MRCA programme, and are responsible for design and construction of the wings, and for the assembly and flight testing of two of the nine prototypes. The first of these, prototype 05, serialised X-586 flew from Aeritalia's Flight Test Centre at Caselle, near Turin, on December 5 last.

Also in production is the AM-3C battle-field surveillance light aircraft, but in co-operation with Aermacchi mainly for export, together with fuselage panels for DC-9 and DC-10 airliners, and fins for the DC-10.

Broad-beam Amazons

LATE LAST YEAR Vosper-Thornycroft announced a developed version of the Type 21 Frigate (Amazon Class) armed with

the new Seawolf point-defence system.

The Seawolf system was developed by BAC and Marconi and is currently undergoing trials aboard HMS *Penelope* (Leander Class) before being fitted to the Royal Navy's new Type 22 Frigate. The former version differs from the RN system in that it is made up of four twin-barrelled light-weight launchers which can be reloaded from below decks.

Naturally various new surveillance and other sensors are incorporated in the new design, but only minor changes are required to develop this new design. Since it involves some additional top weight, and stability is affected, the new design is two feet broader and the hangar is carried out to the full breadth of the hull.

The full armament consists of four twin Seawolf launchers, a 114 mm Mk 8 Vickers gun, four Exocet anti-ship missile launchers, two triple Mk 32 AS side launched torpedo tubes, a Lynx helicopter, twin 30 mm guns (or 40 mm guns could be accommodated).

Ejector seats

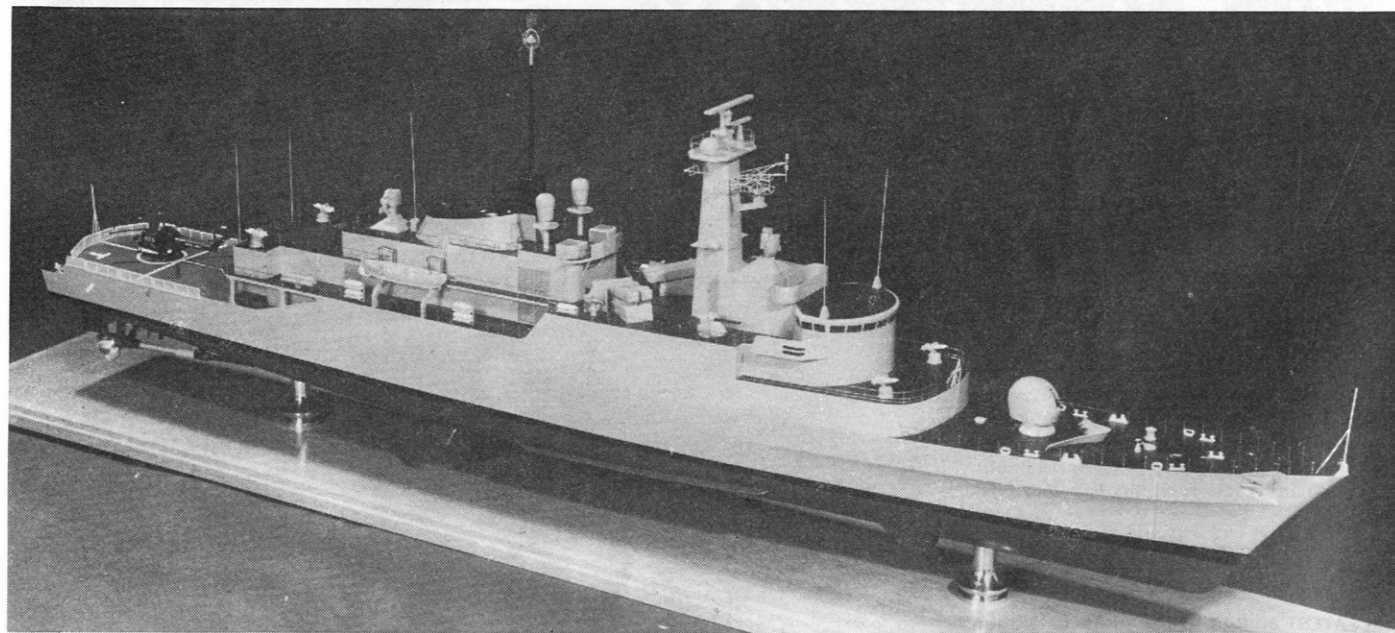
MCDONNELL DOUGLAS have been awarded a \$4 million contract to supply advanced design ejector seats for the USAF's new Rockwell B-1 strategic bomber's four crew members.

On the move

THE RAF's Battle of Britain Memorial Flight has moved its home from RAF Coltishall, near Norwich, to RAF Coningsby, near Lincoln. The Flight, which now comprises four Spitfires, two Hurricanes and a Lancaster, is a regular participant at air shows during the summer months. First formed at Biggin Hill in 1957 with just two Spits and a Hurricane, it had been based at Coltishall for 12 years and received a rapturous send-off from the local populace when it flew out for the last time on March 1.

Continued on page 504

A model of the new broad-beam Type 21 Frigate proposed by Vosper-Thornycroft as an export version of the RN's 'Amazon' Class. Note the four twin Seawolf launchers, two twin Exocet launchers, new 30 mm gun, re-positioned Corvus rocket launcher, two triple Mk 32 torpedoes and the active EW domes and new radars (Vosper-Thornycroft).



AIRFIX NEW MODELS FILE

NEW SERIES 1/32 SCALE TANKS

Undoubtedly one of the more easily recognised tanks of the Second World War, the Crusader III appeared in the summer of 1942. It was regarded as a respected opponent by the German tank crews and enjoyed considerable success in the skirmishing and hit and run roles.

Design of the 'heavy cruiser'

Crusader series was started in 1938 by the War Office's Mechanisation Board in conjunction with Nuffield Mechanisation and Aero Limited.

Crusaders provided the hard-pressed Eighth Army with a tank capable of matching the Africa Korps' Panzer III's and early MKIV's in firepower, if not in armour protection, during the crucial battle of El Alamein in October 1942.

Meanwhile, at the other end of North Africa, the 6th Armoured Division, equipped with Crusader III's, landed in Tunisia as part of the Allied First Army in Operation Torch.

In tank versus tank battles the hull-down position was much favoured and often easy to use due to the Crusader's low profile in the undulating terrain

common to many areas of North Africa.

A wide choice of markings is provided with this new Airfix Crusader III including Regimental insignia and tank squadron transfers for the North African Campaigns.

For up to date news and details of Airfix models, get the Airfix magazine.

Also available are a set of detailed Airfix books. These give background information to such models as the HMS Victory, Cutty Sark, Mayflower, Spitfire, Messerschmitt Bf109, P-51 Mustang and Hawker Hurricane.



Crusader III Tank
1/32 Scale. Series 8.
New to the world's biggest range
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Technical Details

Date of origin: 1942

Engine: 340 h.p. Nuffield Liberty engine

Top Speed: 27 m.p.h.

Range: 100 miles

Weight: 19.75 tons

Height: 7ft 4ins.

Overall length (including fuel tank): 20ft 8ins.

Basic Hull Width: 8ft 8ins.

Armaments 6 pdr gun
Besa machine gun.

THE GUIDING LIGHT OF OPERATION TORCH.



Continued from page 502

The French Collection

LE BOURGET AIRPORT, northeast of Paris, has for many years been well known as the venue for the Paris Air Show. However, with the opening of the new Charles de Gaulle Airport nearby, changes are on the way, and long-term plans call for the area to be converted into an exhibition and leisure centre, with a single short runway retained, mainly for business aircraft. Incorporated into this complex will be Le Musée de l'Air, but whether the vast collection at present housed at Chalais Meudon, in southwest Paris, will completely move to Le Bourget is not yet clear.

As a foretaste of things to come, some one dozen World War 2 aircraft were displayed in a most pleasant way at the 1975 Paris Air Show, together with many smaller exhibits and models. Fighter aircraft from France, Great Britain, Germany, the USA and the Soviet Union were on view, mostly in excellent condition, but the markings and colours depicted no doubt provoked much discussion.

The Musée de l'Air possesses what is probably the largest array of historical aircraft in Europe, ranging from 19th century gliders to the French ram-jet and rocket research aircraft of the 1950s. Several well-known machines from both World Wars, of both French and other countries' origin, together with many obscure types are included in the collection.

If the small display at Le Bourget last June is anything to go by then the new Musée de l'Air, when it is established, will be well worth looking forward to.

F-15 Eagle

THE AMERICAN F-15 Eagle, in service with the 555th Tactical Fighter Training Squadron at Luke AFB, Arizona, for over a year now, has recently also joined the 1st Tactical Fighter Wing at Langley AFB, Virginia (January 9).

Since its first flight in July 1972, more than 50 F-15s have been delivered to the USAF, the majority production models but including 20 for the R&D programme. Production is now at the rate of nine aircraft a month, and a full wing will be in service at Langley by the end of the year.

During its life so far the F-15 has broken all world rate-of-climb records, being capable of reaching a height of 98,425 feet in under 3½ minutes, while other exercises have shown it to be superior as a 'dog fighter' to all other US fighter types, the aircraft having 'won' 176 out of a total of 178 'engagements'.

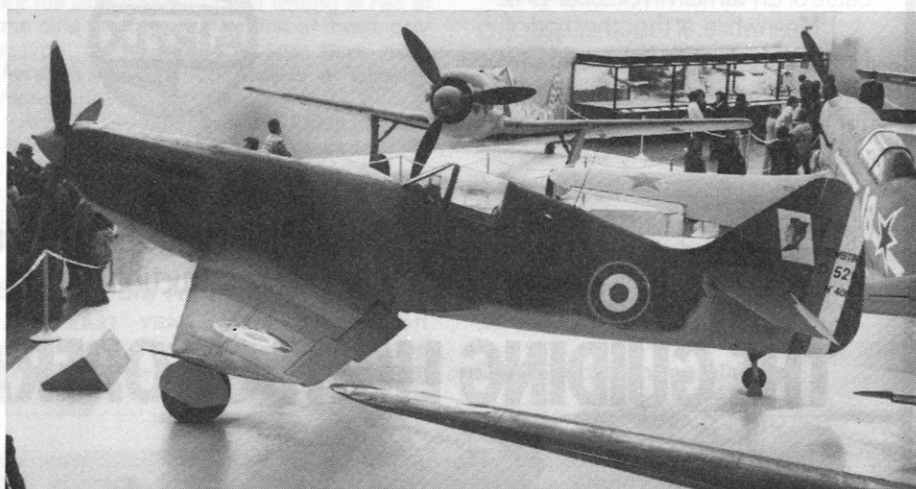
New Sheffield Class

THE GOVERNMENT announced in January that Swan Hunter has received an order for a seventh Type 42 Sheffield Class guided missile destroyer for the Royal Navy.

The new 3,500 ton vessel, to be named HMS Exeter, will be equipped with the Sea Dart missile system, the 114 mm Vickers Mk 8 gun, and a Westland Lynx helicopter. She will be similar to the other six warships in the class, HMSs Sheffield (in service), Newcastle, Glasgow, Cardiff, Birmingham and Coventry (all building). □



Above Erstwhile adversaries were these fighters from Germany and the USA. Nearest is a Fw 190 (possibly a French-built NC 600); against the far wall a P-51 and P-47. **Below** The Dewoitine D520. **Bottom** Fighters from the USSR, the UK and the USA. In the foreground is the Yakovlev Yak-3, beyond this Spitfire IX BS464, carrying the code letters of 340 Squadron, and in the background a P-47 and Polikarpov I-153 (Peter F. Guiver).



AIRFIX NEW MODELS FILE

ROMMEL'S HALF-TRACK

In the Western Desert battles of 1941-43 the Germans came near to victory due to the tactical skill of their commander, Field Marshall Erwin Rommel. Rommel frequently directed operations from just behind the front line, his armoured radio command car becoming a familiar sight to the German troops.

'Greif' (Strike), as he named the vehicle, was a standard SdKfz. 250/3 semi-tracked reconnaissance car.

The SdKfz.250 series of armoured vehicles was designed and built by the firm of Demag. The 250's carried a crew of six and a main armament of two heavy machine guns. With the 250/3 version, accommodation was reduced to four to make room for the radio equipment.

No less than 14 different models of the basic 250 were produced including supply and cable laying vehicles, anti-tank and self-propelled guns and observation cars. The engine had seven forward and three reverse gears giving it a respectable

cross-country speed of 37 mph.

The Airfix 'Greif' reproduces a multitude of accessories and fine detail flexible tracks.

For up-to-date news and details of Airfix models get the Airfix magazine.

Also available are a set of detailed Airfix Books. These give all the background information to such models as the HMS Victory, Cutty Sark, Mayflower, Spitfire, Messerschmitt Bf109, P-51 Mustang and Hawker Hurricane.



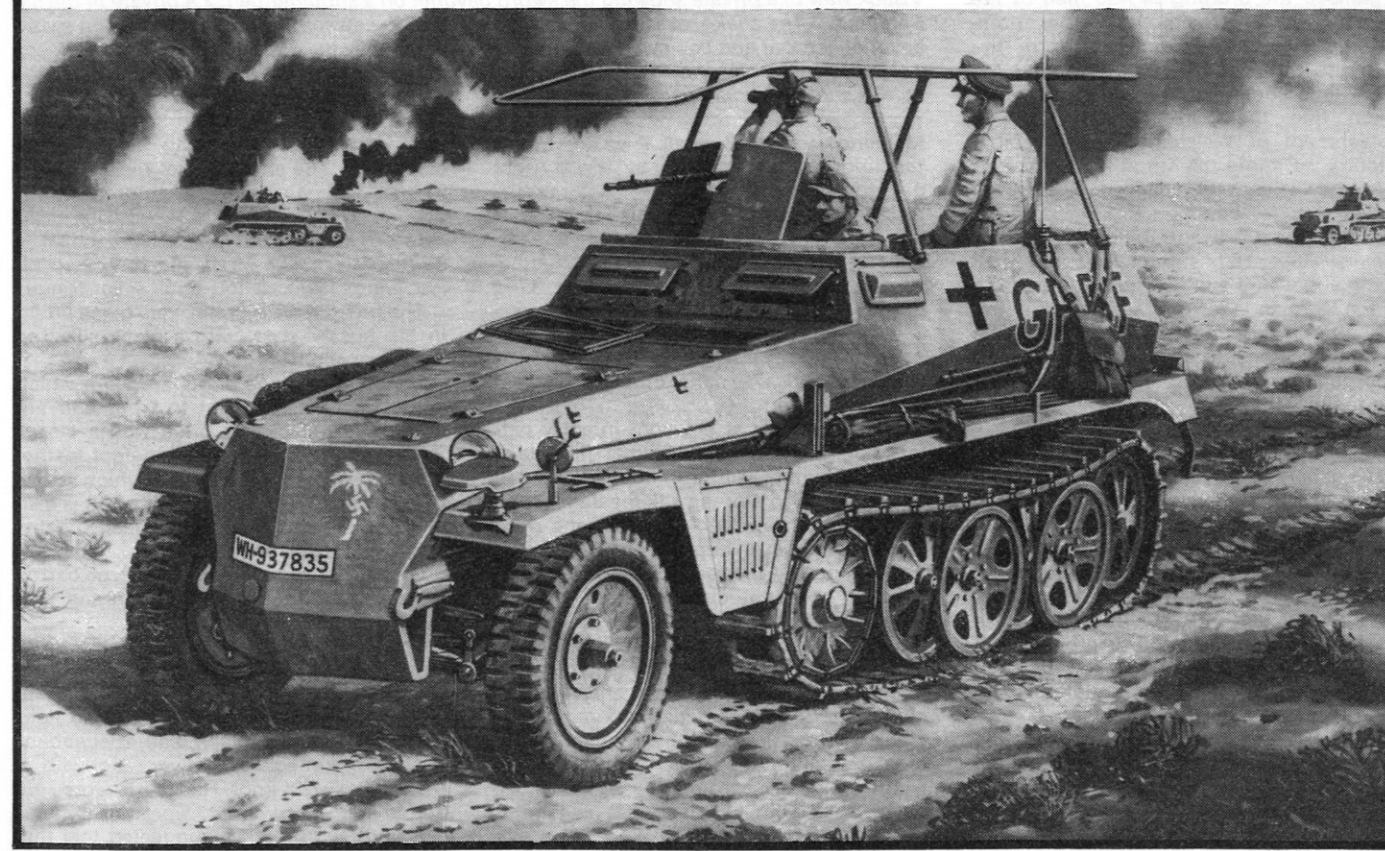
**Rommel's Half-Track
32nd Scale Series 6.**

**New to the world's biggest range
of construction kits.**

Technical Details

Date of origin:	1939
Make/Model:	Demag SdKfz 250/3
Engine:	6 cylinder 4.17 lit. Maybach.
Top Speed:	37 mph (cross-country)
Fuel capacity:	31 gallons.
Range:	186 miles.
Armament:	Two heavy machine guns.

OUR HALF-TRACK IS ROMMEL'S GREIF.



British Army uniforms

1660-1900

Royal American Regiment 1797 by Bryan Fosten

WE HAVE ALREADY examined the raising of the 60th Royal Americans and described their early uniforms. The regiment lived up to the unique character which it developed in its initial years and developed a form of uniform by the beginning of the 19th Century which makes it one of the most interesting of the infantry regiments of the British army of the period.

On June 25 1797 the first battalion of the regiment was drafted into the second battalion and from the result of the amalgam two fresh battalions were organised. They were in Quebec, Canada at the time of this reorganisation.

On August 23 the same year HRH Frederick Duke of York was appointed Colonel of the regiment and due to a great extent to his interest in the regiment it was expanded by the raising of an additional, 5th, battalion in December that year.

The 1st and 2nd Battalions were now in Guernsey in the Channel Islands, the 3rd and the 4th were in the West Indies and the new 5th was formed at Cowes on the Isle of Wight.

From its raising the 5th was destined to have a great influence on the future of the British army. Its first commander was General Baron de Rottenberg, a specialist in the training of German jager riflemen. He organised the drafting of 400 men of the French émigré regiment Baron Hompesch's Mounted Riflemen to form the cadre of his new battalion. At about the same time some New York Rangers were taken into the third battalion and a detachment of Walstein's Foreign Light Infantry went into the 4th at Martinique.

In April the next year de Rottenberg moved his raw battalion to Ireland where they began extensive training in the use of the new Baker Rifle and tactics which their commander had evolved from the training of the German jager regiments. Soon after this the 1st Battalion moved from the Channel Islands to the West Indies and George III raised two further battalions for the regiment.

The 6th, which was also raised on the Isle of Wight, was composed entirely of Germans expert in the use of the rifle. The 5th Battalion was now moved from Ireland to the West Indies and northern coast of South America where they received into their ranks 500 riflemen from Lowenstein's Chasseurs. The clothing warrant of 1800 gives us our first official clue to the dress worn by the 5th Battalion. It prescribes a Green coat. A further warrant in 1803 amplifies this to Green jackets, pantaloons and short black gaiters.

In 1955 I had correspondence with the late C. C. P. Lawson who compiled a great many notes on the first green uniform of the 5th Battalion from material which had been in turn gathered by P. W. Reynolds, S.

M. Milne and L. E. Buckell. If we add to this the information provided by the present day doyen of British military costume historians, W. Y. Carman, we can, I think, conjure up a reasonable picture of the appearance of this very 'foreign looking battalion' as the *Gentleman's Magazine* for 1799 put it.

According to a miniature of Lieutenant John Anthony Woolf (commissioned December 30 1797) the officer's uniform was as follows:

The headdress is the light infantry pattern of the Tarleton helmet in black polished leather with a full bearskin crest. Around the cap a green silk pleated turban entwined with a silver chain. On the right side a small silver bugle-horn. The turban tied in a bow at the rear. On the left side of the cap a scarlet cloth pleated cockade with a small silver ball button in the centre. The black visor is edged with silver.

The coat is a hussar dolman in green cloth with a scarlet collar and pointed cuffs. The front of the coat decorated with black silk frogging with three tapered rows of silver ball buttons. The collar decorated with a white silk cord edging and an inner white braid with two loop eyes near the fronts. The cuffs trimmed with white silk

and with an inner tracing braid with a single eye. The shoulders of the coat reinforced with wings made of green cloth overlaid with scarlet and faced with silver lace on which silver plated curb chain is sewn both on the strap and the crescent. The wings have a short thick silver fringe.

The breeches are green, very close fitting in the hussar style, with a black silk frog loop over the front falls.

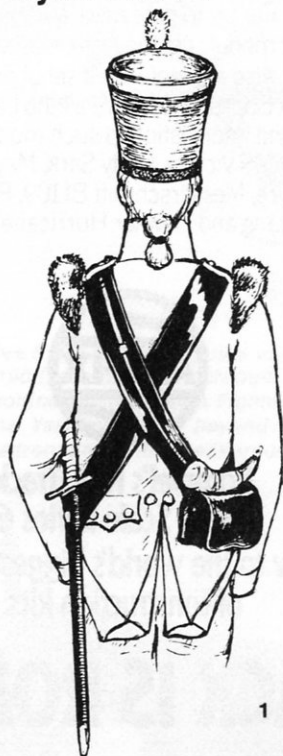
Short hussar-type boots are worn which come to a raised point in front and are bound with black silk braid with a tassel.

The officers wear a black patent leather pouch belt on the breast of which is the silver Maltese Cross badge. The belt is also charged with a silver lions' head, chains and a large whistle.

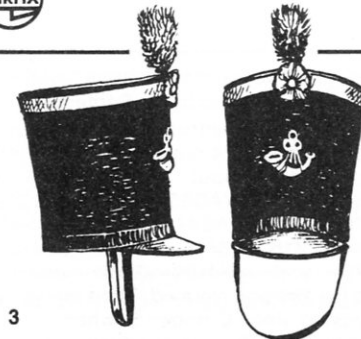
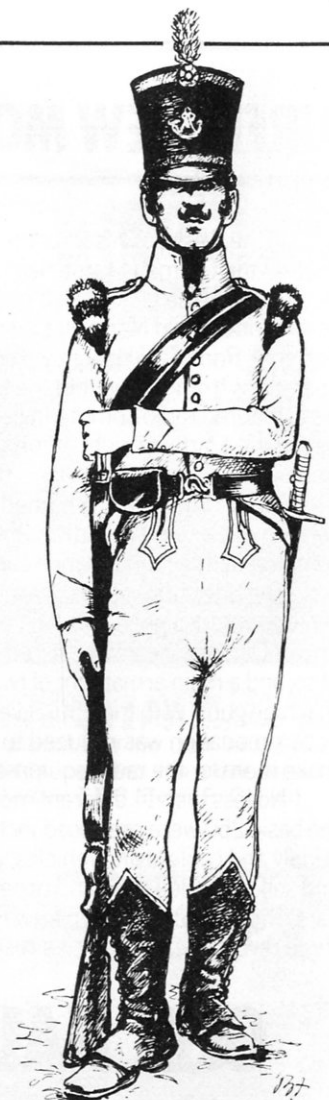
Over the jacket a wide hussar-type barrelled sash constructed of red cord and with red barrels.

The sword belt is black patent leather and is narrow with a silver plated snake clasp and lions' heads. The officer has white gloves and carries a sharply curved light infantry sabre in a black leather scabbard heavily mounted with silver and with a black silk sword knot. His hair is worn in a queue and is powdered.

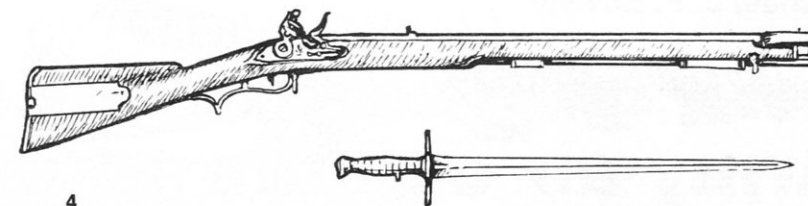
Several writers have suggested that this



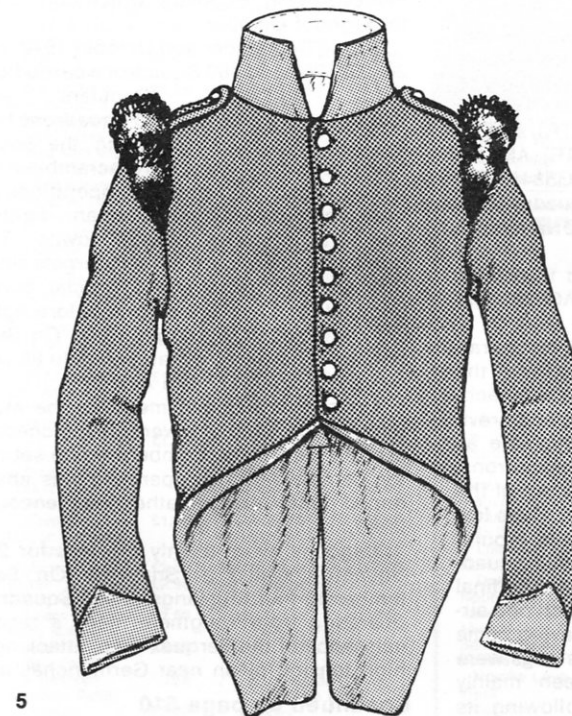
1 Back view of a private showing the sword bayonet on a shoulder belt. 2 A private of the 5th Battalion. 3 The shako, evase, as described by C. C. P. Lawson. 4 The Baker rifle and sword bayonet. 5 Front and back views of the first jacket worn by the 5th Battalion. As can be seen it strongly resembles the cut of the newly introduced jacket for the rest of the Line. Only the colour and the shoulder rolls are different.



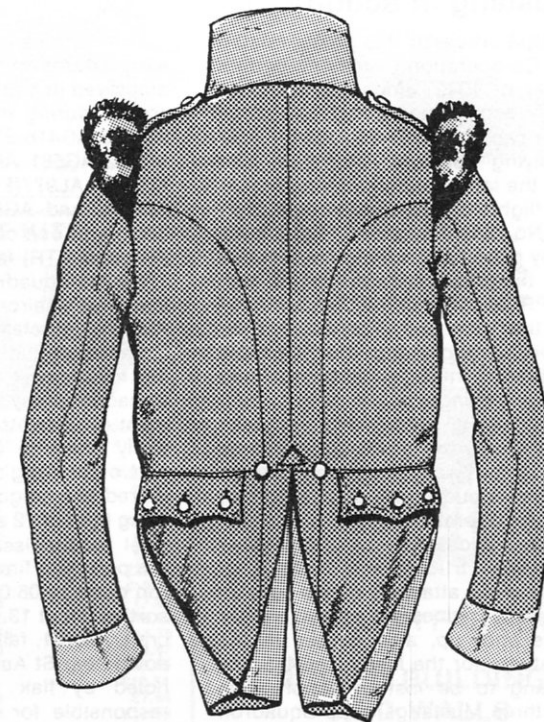
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4



5



costume is that of the Hompesch Mounted Rifleman but this cannot be so as they were dressed in an entirely different style.

The riflemen wore black shakos slightly wider at the top than the bottom according to Lawson — evase. The caps were black and had a strip of green lace sewn around the cap just below the top edge. The scarlet cockade was worn on the front of the cap with a small pewter central button and the 'tuft' was green. The cap had a white metal bugle-horn badge on the front. The green jacket had a red collar, red pointed cuffs and red shoulder straps. There was a red piping down the front edge of the coat and the garment was made to cut away sharply at the waist and had short red turnback skirts. On each shoulder the jacket had large woollen 'rolls' made in green with wide red stripes. These rolls were to protect the riflemen from cavalry sabre cuts. The battalion wore bright blue breeches with a red spear pointed piping over the falls. They wore short black cloth gaiters with a red piping.

Two versions of the equipment are given in separate descriptions. In one he wears two crossed black leather belts one of which supports the brass mounted sword bayonet of the Baker Rifle and the other a black ammunition pouch. In the other source a pouch belt is worn but with a black leather waistbelt with a brass snake clasp in front which supports the sword bayonet and a small bullet pouch on the right front.

C. C. P. Lawson in correspondence states that S. M. Milne stated the 5th Battal-

ion were first armed with German double-barrelled rifles and that the shakos had a green lace band around the top and a black lace band around the bottom. He further states it was found necessary to fix a chin strap to the caps to avoid them falling off during the extended order in which they were taught to fight. The riflemen carried brass powder horns to prime their rifles. They were fixed above the pouch on a long green cord.

The question which still remains unresolved is how the uniforms of the non-commissioned officers were distinguished from those of the riflemen. No precise record remains but we can rely to some extent on the evidence for the first badges of rank for the 95th Rifle Corps who were raised in 1800.

If we exclude the particular distinguishing badges which were introduced for that elite corps and which included such trimmings as 'sword' badges for some NCOs we can nevertheless piece together a reasonable estimate of the badges of rank which the various non-commissioned ranks would have worn.

The Sergeant Major wears four silver chevrons, each 'V' on a piece of red cloth and the four chevrons then sewn on a piece of the cloth of the coat on the right upper arm. In addition he wears the officers' pattern barrelled sash around his waist and carries an officers' pattern sword. The sergeants have three white cloth chevrons made up into a badge in a similar way and worn on the right upper arm. They wear a crimson worsted sash around the waist and

have malacca canes fastened to a breast button of their coats in the style of the German jager NCOs of the period. The sergeants carry rifles. The corporals have two white cloth chevrons made up in the same fashion and worn on the right upper arm. They wear no sash but carry canes. In addition the chosen men of each company, the best riflemen, picked for future promotion, wear a strip of white cloth, sewn on red facing cloth, around their right lower arms above the cuff.

The Sergeant Major wears an officers' pattern pouch belt with Maltese Cross and whistle, the sergeants wear the same pouch belt as the men but with the addition of whistles.

The new field drill introduced by de Rottenberg meant that there was no need for drummers. Instead the companies relied on buglers. The instrument used in the field was the horn, usually a metal mounted cow horn worn on long green woollen cords with tassels. The bugler would follow the tradition accorded to the drummer and did not belong in the ranks. His uniform would be distinguished in some way and, because of the plain and drab uniform selected for the battalion, would have been unlikely to have been over-embellished, defeating the object of the sombre clothing. We have therefore construed that the only additional trimming to the jacket would be on the shoulder 'rolls'. These were possibly reversed and show red with green stripes and the addition of red seam lace and chevrons of red on each sleeve. □

Michael J. F. Bowyer

Army-air colours 1937-45

The Mustang in action

THE PREVIOUS article in this series related how Army Co-operation Command had, in the summer of 1942, embarked upon an increasingly active operational role using North American Mustangs 1s. By late June they were flying 'Populars', 'Rhubarbs' and 'Lagoons', the latter being shipping reconnaissance flights off the Dutch coast. During July No 268 Squadron flew such searches by paired aircraft mainly between Texel and the Hook. Meanwhile, at high altitudes, PR Spitfires of 140 Squadron — still part of the Command — continued their sorties over France and the Channel Islands gathering intelligence material and data for map making, etc.

During a typical offensive reconnaissance on July 14, the first for some days because summer weather did not always give sufficient cloud cover, three pilots of 26 Squadron operated in the Boulogne-Abbeville area crossing into France near Berck. Railway trucks and sidings at Randerfleure were attacked in the face of fierce light flak. Fresnes station and a water tower were shot up, also barges in the Somme Estuary for the loss of AG415, the first Mustang to be lost in action. Two days later three Mustangs of 26 Squadron operated in the Samur-Abbeville area and attacked soldiers on the beach at Hardslot. The formation became separated in the low cloud and both AG399 and AG532 failed to return. Such low level operations needed to be conducted often in the face of intense flak in poor visibility.

Gatwick-based 239 Squadron had commenced operations in June 1942. On July 19 two pilots made a reconnaissance of waterways in the Gravelines area, attacked barges then turned their attention to a goods train near Audricque. During a photo reconnaissance of the airfields at Beaumont and Tricqueville on July 21 both Mustangs were engaged by six Fw 190s and AG565 was lost. Meanwhile No 268 Squadron had continued its 'Lagoons'. A record 20 sorties was flown on the last day of July by Spitfires of 140 Squadron, which shows the intensity to which operations by the Command had been increased.

Reconnaissance flights in early August 1942 by Nos 26 and 239 Squadrons in addition to those of 140 Squadron were planned to draw as little attention as possible to their main aim, for they were in part gathering information for the Army's Dieppe raid postponed from July and now set for around mid-August. Army Co-operation Command's Battle Order for the raid comprised two Blenheim squadrons and 35 Wing's four Mustang squadrons, Nos 26, 239, 400 and 414. Main task for the Mustangs was tactical reconnaissance observing any approach of enemy ground forces and further ground reinforcements along roads within the Le Havre-Rouen-Amiens-St Valery area.

From the early hours of August 19 until early afternoon the Mustangs were busily employed in pairs. No 26 Squadron flew 16 sorties during the morning using in pairs AM148/AG418(FTR), AG536(FTR)/AG574, AG462/AG581, AG535/AG463(FTR), AM215/AG462, AL977(FTR)/AG531, AG584(FTR)/AM110, and AG531 (a 171 Squadron aircraft) and one other machine. Five aircraft (listed as FTR) failed to return.

No 239 Squadron despatched 14 sorties, lost three aircraft (AG533, AG537 and AM134) and claimed a Fw 190.

Canadian pilots of 400 Squadron operating for the first time co-operated with the Canadian Army's 2nd Division. A detachment of 17 pilots and 12 aircraft had previously flown to Gatwick to participate as part of 39 Wing's force of four squadrons. Paired Mustangs flew 24 sorties out of the Wing total of 72 sorties (35 tasks). Deep low level reconnaissances were made around the port. The first operation by 400 Squadron came at 06.00 hrs for Task 4. The final sorties left at 13.15 hrs from which one aircraft, AM151, failed to return having come down near St Aubin. Three Mustangs were holed by flak which had been mainly responsible for the losses. Following its

introduction to operations this squadron began flying 'Rhubarbs' in September.

The fourth squadron engaged around Dieppe was No 414 making its operational debut and without loss. During the morning AG612/AG655, AM160/AG582, AG376/AG470, AG444/AG375, AG459/AG601, AM160/AG655, AG502/—, AG470/AG375 and AM160/AG582 operated and a Fw 190 was claimed. Then the squadron rested until October 5 when it commenced flying 'Populars' which continued throughout October.

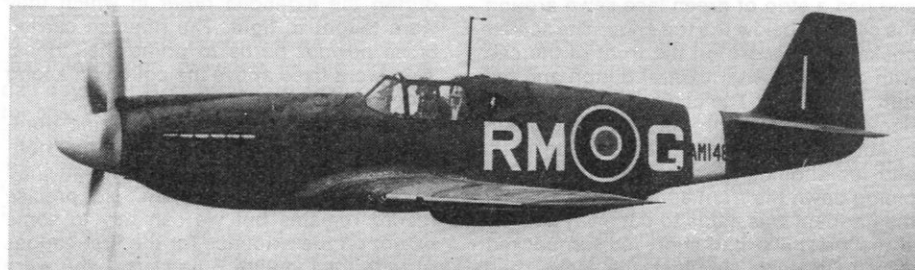
During September and October 1942 Nos 26, 239, 268 and 400 Squadrons carried out more 'Rhubarbs', 'Populars' and 'Lagoons'. Both 26 and 400 Squadrons had by then begun patrols along the south coast for which they were scrambled for the so-called 'anti-rhubarb' operations to intercept low flying German fighter-bombers attacking coastal towns. The fighter-bombers were difficult targets since they came in below effective radar cover, bombed, and had often gone before fighters could reach the target areas. On September 7, however, a marauding Ju 88 was damaged by AM122 and AM144.

Another new employment for the Mustangs came when 11 were despatched to escort nine Boston bombers which set out for Den Helder. The operation was abandoned when bad weather was encountered.

'Lagoons' were mainly the task for 268 Squadron based at Snailwell. On September 15 four Mustangs of 400 Squadron operating from Tangmere made a reconnaissance of the Serquex area, attacking a high tension pylon near Germanches and

Continued on page 510

Below RM:G-AM148 of No 26 Squadron was used during the Dieppe raid in August 1942 (Flight International). Bottom AG456 with 'BARBARA' in white by the cockpit at the moment of 'chocks away'. This aircraft was with No 2 Squadron from June 28 1942 until it was destroyed in an accident on October 30 1942. The yellow leading edge is shorter than on some aircraft (IWM).



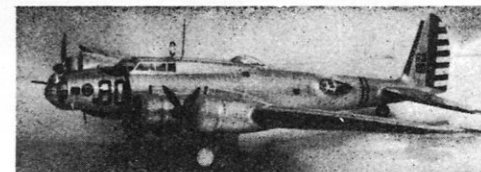
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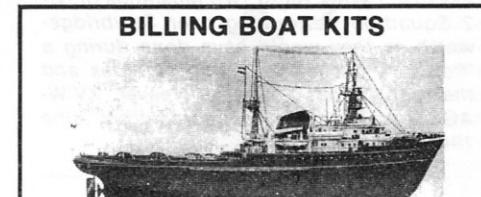


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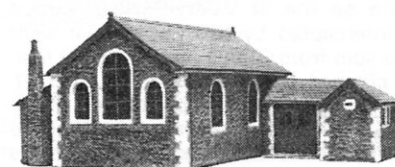
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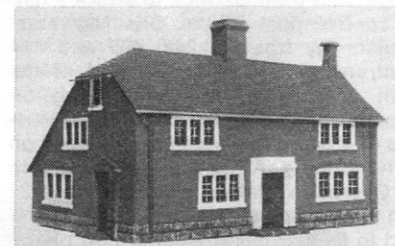
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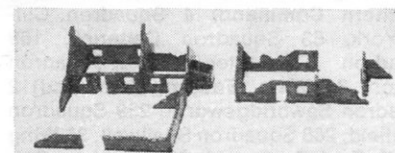


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Continued from page 508

two factories by Buencourt. Next day two pilots of 400 Squadron reconnoitred the Boulogne area and on the 19th three of 26 Squadron did a PR of the Le Touquet-Stella Plage area and shot up possible flak positions. That week's activity included the usual PR sorties by 140 Squadron's Spitfires. Such operations were not always uneventful as on September 16 when a Spitfire on the St Valery-Barfleur circuit was intercepted by two Fw 190s. It went into a spin from 31,000 feet to 15,000 feet, then climbed on full boost to 21,000 feet, but the enemy caught up after ten miles. Four times the Spitfire waited for them to catch up, then out-turned them. 30 miles off Beachy the enemy gave up the chase.

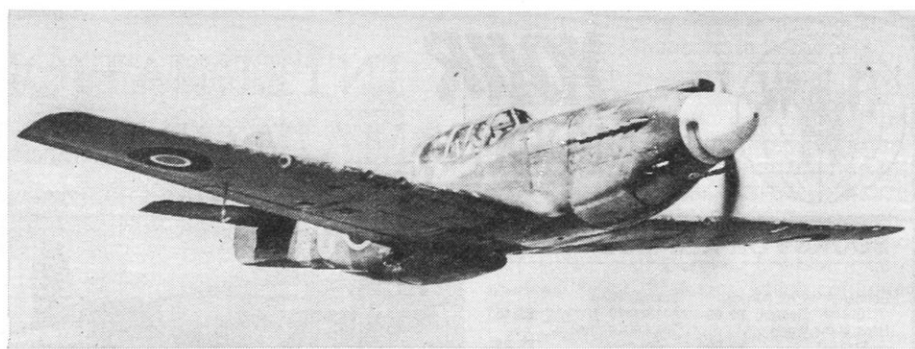
Similar operations continued in October, 414 Squadron joining in from Croydon on October 5. They were joined by an unusual operational combination on October 9 when five Spitfire Vbs of No 1 CACU Detling operated from Gatwick to attack a battery control post in the Gris Nez area. 'Populars' by Nos 26, 268, 400 and 414 Squadrons continued to the end of the month with 268 still concentrating on 'Lagoons'. Spitfire IIbs of 1 CACU and Mustangs of 4 Squadron were also engaged on ground strafing. A highlight of the month was Operation 'Petworth' on October 22 when all the squadrons of 35 Wing combined to fly a 'Popular/Rhubarb' to photograph the coast around Fecamp with diversions inland.

In October the layout of the Mustang force was as follows: **32 Wing (Scottish Command)** 225 Squadron Macmerry, 241 Squadron Ayr, 309 Squadron Dunino (still converting from Lysanders); **33 Wing (Northern Command)** 4 Squadron Clifton/York, 63 Squadron Catterick, 169 Squadron Doncaster, 613 Squadron Ouston; **34 Wing (Eastern Command)** 2 Squadron Sawbridgeworth, 239 Squadron Cranfield, 268 Squadron Snailwell; **35 Wing (South East Command)** 26 Squadron Gatwick, 400 Squadron Odiham, 414 Squadron Croydon; **36 Wing (Southern Command)** 16 Squadron Weston Zoyland and 170 Squadron Andover.

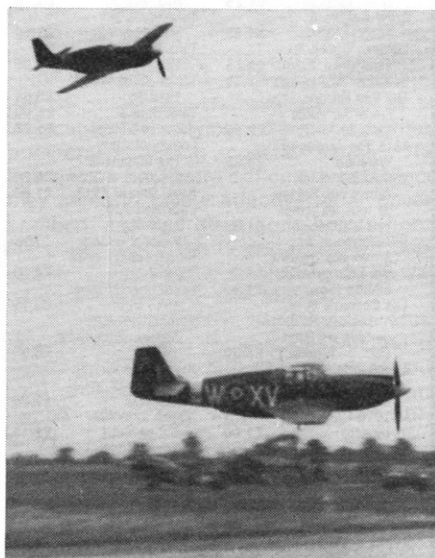
During November 26 Squadron was much engaged on defensive patrols along the south coast, 171 Squadron flew these in the Shoreham-Beachy area and 168 Squadron along the East Anglian coast to which area the fighter-bomber strikes were extending. No 400 Squadron was flying a shipping reconnaissance on the 7th when the usual pair of Mustangs became separated. One was approached by two Bf109s. The Mustang pilot pulled up and at 800 feet turned sharp left. One of the Messerschmitts fired and the other raced past. The Mustang pilot then fired two three-second bursts and parts of the Messerschmitt's rudder fell away and then it dived vertically into the sea.

Early combats showed that the Mustang 1 could usually out-run enemy fighters but was inferior to the '109 and '190 only on the climb. In the slower speeds of close combat it lost effectiveness of aileron control and had a poor rate of roll. But, turning radius with small amounts of flap was tighter than that of enemy fighters.

Coastal defence patrols generally drew little action, but soon after passing St



Above XV:U-AG550 of No 2 Squadron in use from June 1942 until it was destroyed in a crash on May 26 1943. It wears a black 'U' under the nose on what appears to be a Sky disc (IWM). **Right** Two Mustangs of No 2 Squadron performing over Sawbridgeworth as they would have done during a 'Popular', the leader taking obliques and the rear aircraft acting as weaver. XV:W-AG623 was with the squadron from June 1942 until May 1943.



Catherine's Point on November 13 two Mustangs of 414 Squadron were ordered to the Needles to intercept a raid coming from Cherbourg. About 25 miles south of the Isle of Wight two Fw 190s were observed and the Mustangs turned to engage. After firing at them the Fw 190s fled into cloud, then a Mustang was chased almost to Selsey where it evaded its pursuers. The Mustang had been flying at 325 mph, and when the '190 used boost it was able to close on the Mustang.

November saw a general shake-up in Mustang positioning as squadrons were withdrawn for service in north-west Africa.

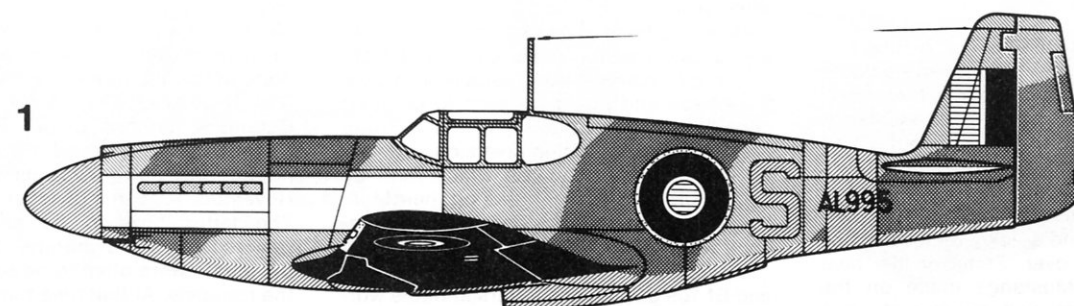
In the course of an offensive patrol of Dutch airfields on November 27 a Ju 52 was shot down. Then, on the 27th, two pilots on a low level offensive patrol flew to Holland and thence for the first time into Germany. Canals were shot up, barges, tugs and trains thereby proving how useful was the Mustang's very long range.

Periodically there were unusual operations as on December 1 when a shipping reconnaissance was flown by four Whirlwinds covered by four Mustangs and, for high cover, four Spitfires. Some Bf 109s were encountered and whilst the Spitfires engaged them the other aircraft returned home.

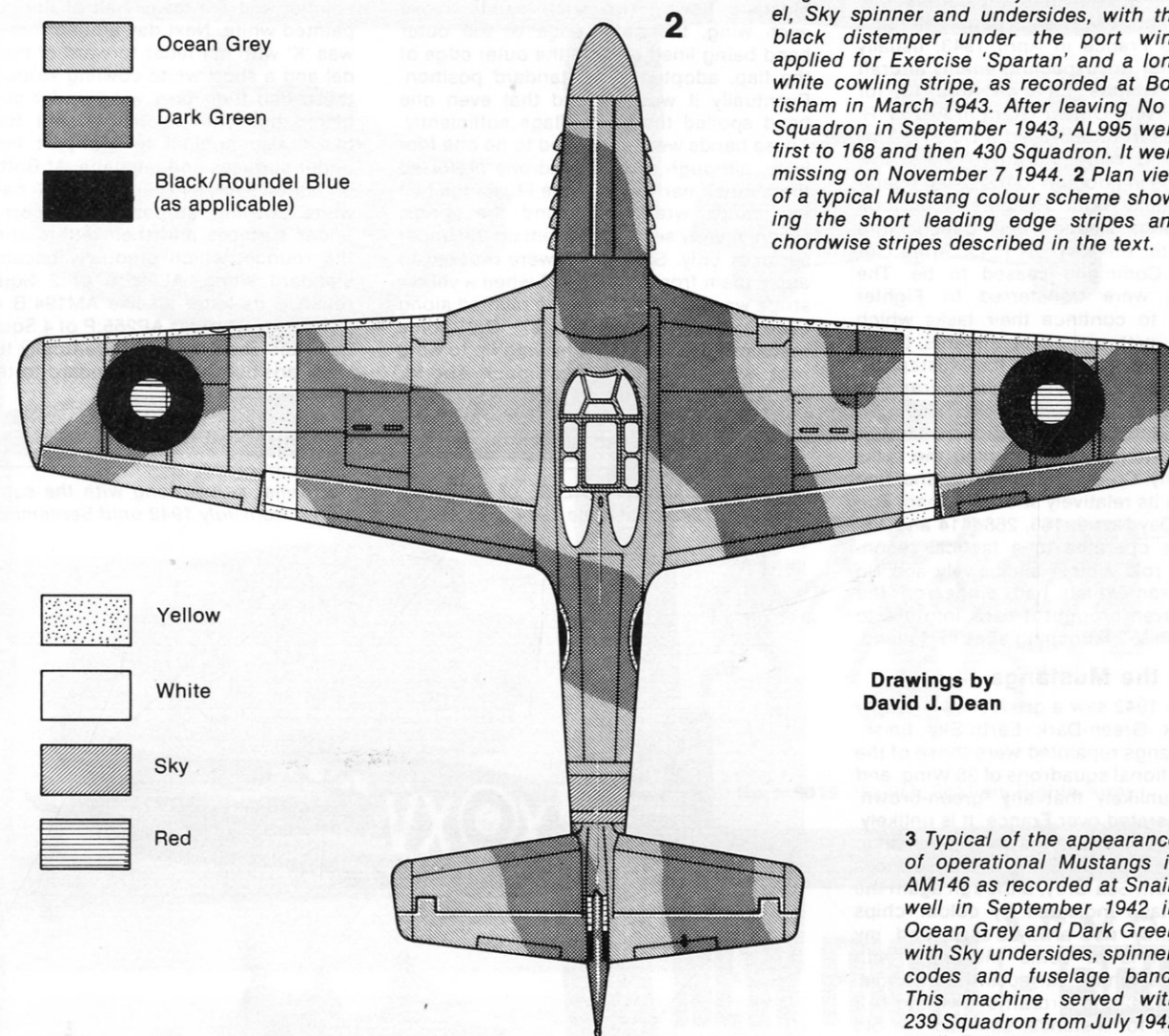
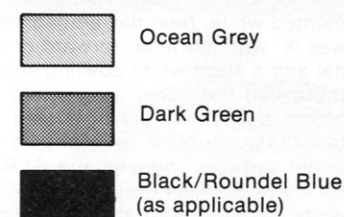
On November 29 'B' Flight of 309 Squadron moved from Dalcross to Gatwick for a spell of operations which began on December 5 with a PR of the French coast using AM217 and AM240. Soon after the squadron began convoy protection sorties from Peterhead.

In November Mustangs flew 59 'Rhubarbs', 30 'Populars', 81 'Lagoons' and 229 offensive patrols. In the week ending December 10 they flew 121 sorties including a widespread 'Rhubarb' over Holland on the morning of the great 2 Group raid on Eindhoven on December 6. Next day four Mustangs attacked ground targets at Meppen and Petten on the Dortmund-Ems Canal, making another incursion into Germany. Another such operation came on December 13 when two aircraft of 268 Squadron flew to Wittmund-Jade Canal-Christen Canal and Dortmund-Ems Canal.

Continued on page 512

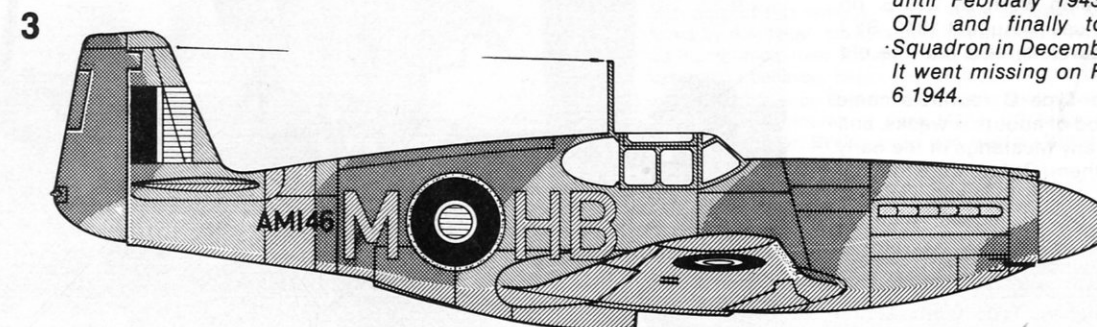


Note: No outline to underwing roundel



1 AL995 in later markings than those shown in the photo on page 512. It has the single aircraft letter in Sky aft of the roundel, Sky spinner and undersides, with the black distemper under the port wing applied for Exercise 'Spartan' and a long white cowl stripe, as recorded at Botolph Claydon in March 1943. After leaving No 2 Squadron in September 1943, AL995 went first to 168 and then 430 Squadron. It went missing on November 7 1944. **2** Plan view of a typical Mustang colour scheme showing the short leading edge stripes and chordwise stripes described in the text.

Drawings by
David J. Dean



3 Typical of the appearance of operational Mustangs is AM146 as recorded at Snailwell in September 1942 in Ocean Grey and Dark Green with Sky undersides, spinner, codes and fuselage band. This machine served with 239 Squadron from July 1942 until February 1943, to 41 OTU and finally to No 2 Squadron in December 1943. It went missing on February 6 1944.

Continued from page 510

carrying full war loads. To distinguish 'friend' from 'foe' the force in the eastern area applied black distemper to the under-surface of the port wing of its Mustangs and a white distemper stripe about a foot wide extending from spinner to the front of the cockpit area along both sides of the fuselage. These temporary markings were roughly applied and quickly removed once the exercise was over. Some of the 'beat ups' which the Mustangs made on the roads of the east and south-east were memorable, as indeed was the frantic activity of the protagonists.

Relying upon their operational radius of 300 miles — greater than any comparable British fighter — Mustangs began 'Ranger' flights into France in April 1943, usually searching for unsuspecting enemy aircraft on casual rounds. Late on April 13, for instance, Flying Officer Grant in AP259 'R' of 400 Squadron destroyed a Do 217. 'Day Rangers' and 'Night Intruders' were now taking place in addition to the usual operations. Day and Night 'Rangers' soon took the Mustangs deeper and deeper into France until, on May 31 1943, Army Co-operation Command ceased to be. The squadrons were transferred to Fighter Command to continue their tasks which carried on, with some amendments, to the end of hostilities. By then the Mustang 1s had been much involved in photographing V-1 sites, spotting for gunners, keeping a watch on enemy ground movements after D-Day and generally performing the tasks which Army Co-operation Command had planned in its relatively short life span. Following D-Day Nos 2, 168, 268, 414 and 430 Squadrons operated in a tactical reconnaissance role almost exclusively and No 26 Squadron which had pioneered the Mustang even brought it back into use to photograph V-2 launching sites in Holland.

Marking the Mustangs

Summer 1942 saw a gradual swing away from Dark Green-Dark Earth-Sky finish. First Mustangs repainted were those of the four operational squadrons of 35 Wing, and it seems unlikely that any 'green-brown' aircraft operated over France. It is unlikely, too, that many Mustangs wore other than the ordained Ocean Grey. Under surfaces were Medium Sea Grey, although again the precise shade indicated by colour chips was certainly not always used and my recollection is of some Mustangs with much lighter under surfaces than normal. Late June 1942 the aircraft of 241 and 613 Squadrons, for instance, still had the old colour scheme being worn by 'UG:S' on July 4. Another in use in August 1942, SY:1 (SY forward of roundels) also had the old scheme still.

The change to Type C roundels came about over a period of about six weeks, and I never recorded any Mustangs in the early colours wearing them. Orders were that the outside diameter of the fuselage Type C1 roundels would be 36 inches, blue 32 inches, white 16 inches, red 12 inches. Type C roundels beneath the wing tips had an outside diameter of 32 inches, white 16 inches, red 12 inches. Type B above the wing tips had 40 inch outer diameter with red 16 inches diameter. The fin striping

measured 27 inches high, with 11 inch wide blue and red stripes divided by a two inch white stripe.

As with other fighters spinners were Sky and a Sky fuselage band was applied aft. These adornments were usually in a pale Sky shade and could be seen to contrast considerably from the Sky of the 2 Group bombers. An interesting diversion was provided by some squadrons which retained black or Dark Earth spinners on their Mustangs to reduce the evidence of their presence when on low level operations.

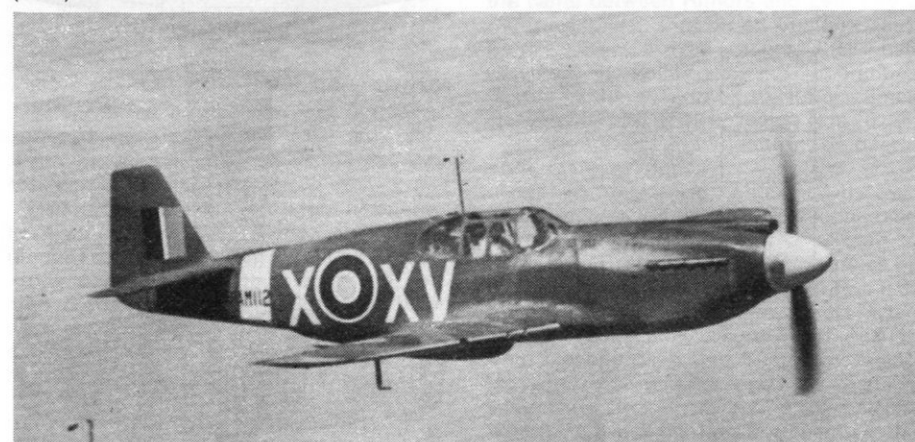
Similarity in shape between the Mustang and Bf 109 gave some understandable worry. Accordingly a special identity feature consisting of chordwise bands on the wings was adopted. There was some experimentation at AFDU in June 1942, one Mustang having two such bands above each wing, the outer edge of the outer band being lined up with the outer edge of the flap, adopted as a standard position. Eventually it was decided that even one band spoiled the camouflage sufficiently. These bands were supposed to be one foot wide, although some squadrons preferred them much narrower. Some Mustangs had the bands wrapped around the wings, others merely settled for them on the upper surfaces only. Squadrons were ordered to apply them from July 1 1942 when a yellow stripe was also ordered to be painted along each wing leading edge. On some machines it extended from wing tip to wing root whereas others had much shorter stripes. But standardisation was never attained. On September 11 1942 at Snailwell HB:B-AG639 had stripes around the

wings and long leading edge stripes whilst HB:Z, HB:W, NM:N were all flying without any yellow chord bands. The chordwise bands had a brief life span, being ordered to be removed in December 1942. I saw none in use after January 1943.

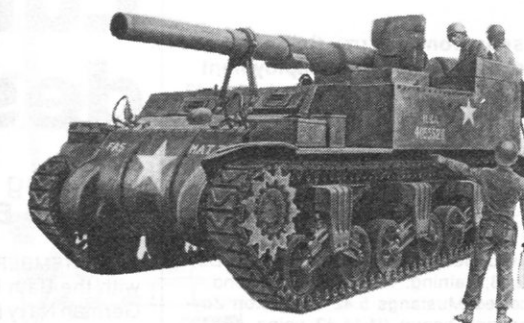
In November 1942 Army Co-operation Command aircraft began to shed their squadron identity letters, the first instance I recorded being three Tomahawks seen on November 10 with individual letter aft only. The latter position for the letter was retained for some months, but by March the letters were often to be seen forward of the roundels. At that time the special markings for Exercise 'Spartan' were in use. Again there were many variations from the norm as on three aircraft recorded March 5 which had their letters aft (S, U, V) and the spinner and the lower half of the cowlings painted white. Next day among those seen was 'K' with her letter forward of the roundel and a short white cowlings stripe. All of these had their port wing under surfaces black, but one machine noted had the black also applied to the port fuselage under surfaces and tailplane. At Bottisham on March 9 AP294:O and AP200:A had long white cowlings stripes, black port wing under surfaces and their letters ahead of the roundel which gradually became the standard siting. AL995:S of 2 Squadron retained its letter aft like AM194:B of 231 Squadron, whereas AP255:P of 4 Squadron had hers sited forward. Eventually the forward position became standard to the end of the war.

Continued on page 514

XV:X-AM112 and XV:S-AL995 of 2 Squadron. The former served long with the squadron, from July 1942 until June 1944, and AL995 was with it from July 1942 until September 1943 (IWM).



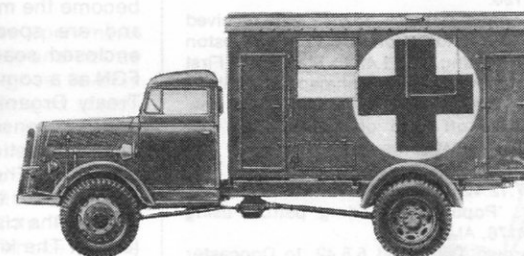
No. M8016 US Soldiers Marine Corps



No. M8029 US 155 mm Gun Motor Carriage M-12



No. M8021 German Tank PzKpfw III Ausf N



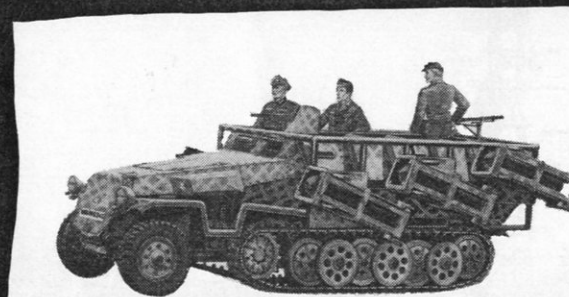
No. M8035 German Truck Opel Blitz — Ambulance Version



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Continued from page 512

Mustang squadrons of Army Co-operation Command, their bases and employment

No 2 Sawbridgeworth. First operated 14.11.42 when AL995 and AM112 flew a 'Popular' to Domburg. PR operations mainly. To Bottisham 3.2.43, Fowlmere 20.3.43. Began 'Lagoons' 29.3.43 using AP203/AG464. Returned to Sawbridgeworth 27.4.43. Aircraft with individual letter forward included X:AM112, K:AL969, J:AM219, H:AM113, Y:AM217.

No 4 Received Mustangs at Clifton 5.42. To Bottisham 21.3.43, training. 16.7.43 to Gravesend.

No 16 Received Mustangs 5.42 at Weston Zoyland. Operations begun 21.11.42 using AP213, AL996, AP239, AG467. One Flight detached Exeter for 'Insteps'. To Andover 1.1.43 (operational detachment Exeter). 'Lagoons', 'Populars', 'Rhubarbs'.

No 26 Gatwick, to Detling 14.1.43. Very active operationally. 1.3.43-7.4.43 at Stoney Cross then back to Gatwick. Examples: RM:T-AG500, 'RM:?'-AM190.

No 63 Reformed Gatwick 15.6.42 and received Mustangs. 16.7.42 to Catterick, 6.11.42 to Weston Zoyland for training. 21.11.42 to Macmerry. First operation 11.1.43 by a detachment at Odiham using AP184 and AM154. 'Populars'. Next flew convoy patrols off Firth of Forth 1-2.43 with AM157, AL956, AG460, etc.

No 168 Received Mustangs at Odiham 11.42. First operation 7.12.42 using AP248 of 613 Squadron. 'Rhubarbs', 'Populars', standing patrols using AG506, AM176, AM114, etc.

No 169 Formed Twinwood 5.6.42, to Doncaster mid-7.42, York 11.42, advanced detachment began ops 5.12.42 using AL993, AM101. To Duxford 18.12.42 for 'Lagoons'. To Andover 26.3.43, very busy on 'Populars'. 21.6.43 to Middle Wallop for 'anti-Rhubarbs'.

No 170 Formed Weston Zoyland 15.6.42. To Hurn 6.42, Thruxton 7.10.42, Andover 11.42. First ops 4.1.43 ship reces. AM108, AP229 operating from Ibsley. 26.3.43 to Snailwell, 'Lagoons' mainly using AL981, AM152, etc.

No 171 Mustangs received Gatwick 9.42. Disbanded 31.12.42, equipment to 430 Squadron. First ops 3.10.42 — interceptor patrols. 18.10.42 first 'Popular' using AG579, AG545. 11.42 interception patrols. 7.12.42 to Hartford Bridge.

No 225 Received Mustangs 5.42 at Thruxton. 31.8.42 to Macmerry. 11.42 gave up aircraft, sailed to NW Africa.

No 239 Gatwick. To Twinwood 31.8.42, Cranfield 21.10.42, Odiham 16.11.42, Hurn 6.12.42, Stoney Cross 25.1.43, Gatwick (part of 123 Airfield) 7.4.43, Fairlop 23.6.43. Aircraft included HB:X-AP170, F-AG356.

No 241 Received Mustangs 3.42 at Bottisham. At Ayr 2.5.42-12.11.42 then overseas.

No 268 Snailwell, to Odiham 31.5.43. Flew last ops 7.5.43, mainly 'Lagoons'. Example: U-AP256.

No 309 Dunino, to Findo Gask 25.11.42 (B Flight detached Gatwick for ops and at Kirknewton 1.3.43). To Snailwell 1.5.43 — 'Lagoons' from 28.6.43 using G:AP240, B:AM211, N:AL964, etc.

No 400 Odiham, then Dunsfold. Flew 'Insteps' from 1.43 from Trebalzue, to Dunsfold 5.43. Examples used: SP:W-AG660, SP:F-AG577, T:AG658.

No 414 Croydon, to Dunsfold 5.12.42, Middle Wallop 1.2.43 (very active), Dunsfold 21.2.43, Middle Wallop 9.4.43 for 'Rhubarbs' and 'Roadsteads'. 'Anti-Rhubarbs' from 19.4.43. To Harrowbeer 26.5.43 and operated from Predanack for 'Insteps'. Examples: RU:C-AG631, RU:R-AG371.

No 430 Formed 1.1.43 Hartford Bridge. 2.1.43 to Dunsfold and received Mustangs 3.43. First ops 26.5.43 using AP171, AP200, AP194, AP228 on 'Rhubarbs'.

No 613 Arrived Twinwood, received Mustangs 5.42. To Ouston 28.8.42, detachment for ops at Gatwick 12.42. To Wing 2.3.43, Bottisham 7.3.43, Ringway 19.5.43, Wellingore 30.3.43, Snailwell 15.7.43. In 5.43 flew 'Lagoons' from Coltishall. Examples: AP207, AP177, AP254, AG646, AG520.

Lutjens Class destroyers

Detailing the Airfix kit of the *Rommel* by Paul E. Beaver

IN SEPTEMBER 1964 an order was placed with the Bath Iron Works Co by the Federal German Navy (FGN) for three guided missile destroyers (DDGs) to be of a similar design to the United States Navy (USN) *Charles F. Adams* DDGs; at a cost of \$US44m. Units of this latter class are in service with the USN (23) and also with the Royal Australian Navy (three). Federal German Naval Ships (FGNS) *Lutjens*, *Molders* and *Rommel* have become the major surface units in the FGN and are specially modified to fulfil the enclosed sea-area role envisaged by the FGN as a commitment to the North Atlantic Treaty Organisation (NATO); for example, different sensors are fitted to give the German domestic industries employment in the order. The Airfix 1:600 scale kit gives the modeller the chance to model all three units in the class — not just FGNS *Rommel* (D187). The kit is detailed below:

Name	Pen No	Launched	Completed	Remarks
<i>Lutjens</i>	D185	11.08.67	12.03.69	USN DDG 28 Major refit 1976/77
<i>Molders</i>	D186	13.04.68	12.09.69	USN DDG 29 Major refit 1975/76
<i>Rommel</i>	D187	01.02.69	24.04.70	USN DDG 30 Major refit 1974/75

Armament

The main armament consists of two single-mount Mk 42 127 mm dual-purpose gun mountings, one forward and one aft; these are backed up by the ASROC anti-submarine (AS) mounting amidships and two triple AS torpedo tubes abeam of the bridge. Aft is the single Tartar surface-to-air missile (SAM) mounting (the USN DDGs have a twin mounting).

carried, but naturally information on these is very scanty; similarly data regarding the hull mounted sensors, such as sonar.

Certain corrections

Over the last few years we have come to expect high standards from Airfix in all their products and this of course also applies to their warships; it is good to see that the *Rommel* kit is generally accurate

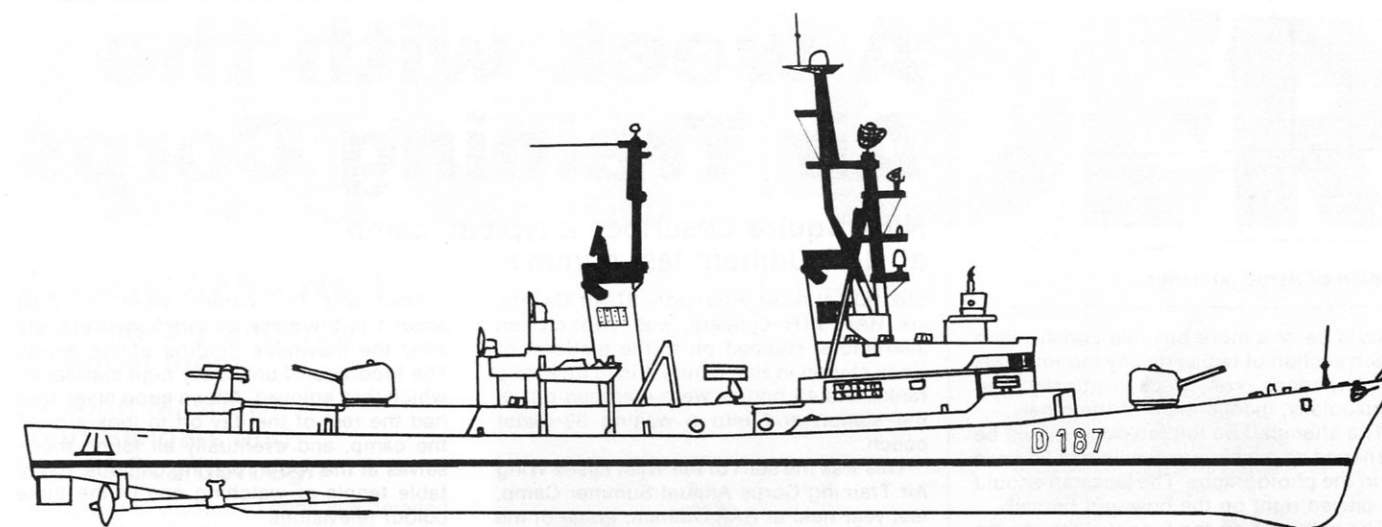
Name ship of class, the FGNS *Lutjens*, D185.



Sensors

On the after funnel is situated the SPS52 three-dimensional radar reflector for air search; while for air surveillance there is an SPS50 set on the mainmast. Warning against the surface threat is provided by SPS10 and SPS37 sets on the foremast, and when this threat has been identified, a GFCS68 gun armament director and radar on the bridge top will guide the Mk 42 mountings on to the target, although the latter do have local control facilities. Should the target need the ASROC guided weapons system (GWS) the AS sensors would be invoked; similarly in the event of an air threat the Tartar SAM would be utilised in conjunction with the two SPG51 scanners aft of the second funnel. The triple torpedo tubes have local control.

Numerous early warning (EW) and electronic countermeasures (ECM) sensors are



and has a good appearance when completed; however, there are several 'above decks' corrections and details which can make the kit an even better representation of the real thing.

First, although the box artwork (see front cover of this issue) shows the standard life-raft canisters positioned on the superstructure sides, they are not represented in the kit. They can either be 'borrowed' from the other modern warship kits or produced from stretched sprue; they should be positioned as shown on the box lid around the bridge area and one either side of the after superstructure just aft of the ship's boats.

Working one's way up the foremast, one comes across various modifications to the aerials and radar scanners. The various EW 'bumps and bulges' seem to be good reproductions except that the lower starboard one is slightly tapered as compared to the port dome. On the next level is another EW dome (possibly a sea skimmer detector), and on a level higher is the SPS10 surface warning set which should be a centrally pivoting open lattice concave reflector and not as moulded in the kit. Still higher is the SPS37 air surveil-

lance radar which is a concave open mesh reflector, similar to the SPS10, and not as moulded in the kit. On the highest level is another EW dome and this rests on a platform would should be of an open lattice construction with a solid centre.

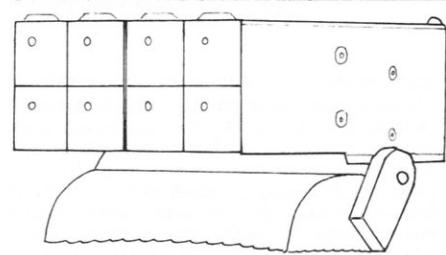
Now on to the mainmast; this can be constructed as per the kit with the exception of the following small points. The horizontal bar should have small 'knobs' on the lower edges (these are best reproduced by small amounts of cement), also the mast should be braced against the front of the after funnel and a D/F loop with two horizontal aerials (of the SPS50 air search radar) pointing to the ship's quarters should be fitted to the very top.

The 3-D air surveillance radar situated on the after funnel is perfect except that the reflector should have small perpendicular edge pieces.

The ASROC AS launcher amidships

Top of page Side view of the FGNS *Rommel* circa 1970. **Right** Foremast detail showing sensors. **Below** Another view of FGNS *Lutjens*. Note life raft canisters, mast details and Asroc launcher.





Sketch of Asroc launcher.

should be of a more box-like construction (each section of two vertically mounted Mk 46 torpedoes can track vertically and horizontally, independent of the other).

The after staff on the foredeck should be reshaped as a whip aerial with a solid base as in the photographs. The jackstaff should be placed right on the bow and braced.

The exhausts on the funnel sides should be slanted aft and at 40° to the vertical.

The anchor arrangement on all the ships is that there is one anchor right on the bow and one on the starboard side of the bow.

Both gun mountings have various aerials which should be modelled from the photographs.

Notes

The Penant Numbers are in three positions and are white with a black outline, including the stern one.

The navigation lamps at either side of the bridge are red (port) and green (starboard).

Colour schemes for the Lutjens Class

Mid-grey (shade darker than RN) Hull, superstructure, funnels, turrets, Tartar launcher, triple torpedo tubes, ASROC launcher, GFCS68, SPG51 radars, EW domes, anchors, bollards, fairleads, capstans, staffs.

Slate grey All decking and superstructure tops.

Dark grey After funnel grilles, SPS10 and SPS37 radars.

Black Boot topping (thinner than RN warships), funnel caps, forward funnel grilles, mainmast, upper part of foremast, gun muzzles, SPS52 radar, bridge windows, Tartar missiles, port sighting pod of Mk 42 gun mountings.

White Life rafts, ship's boats above waterline, chains.

Dark blue Ship's boats under waterline (can easily differ from time to time).

Dark red Anti-fouling under waterline.

Bronze Propellers.

NB Ship's crests are painted on either side of the bow astern of the anchors — no details.

References

Federal German Naval Photographs, *Jane's Fighting Ships*, 1970-71, 1974-75, and *Jane's Weapons Systems*, 1972-73.

Acknowledgement

The author would like to thank Lieutenant Colonel W. Hanke, Assistant Military Attaché, Federal German Embassy, London, who kindly supplied the photographs. □

Dimensions 134.1 x 14.3 x 6.1 metres.
Displacement 3,370/4,500 tonnes.
Speed Up to 36 knots.
Complement 340 officers and men.

A week with the Air Training Corps

Nick Squire describes a typical 'camp' at RAF Odiham last summer

ONE HOT AUGUST afternoon, 37 Air Cadets, six RAF VTR Officers, and two civilian instructors, stepped on to the platform of Hook station in Hampshire. Lined up in two ranks, the 45 bodies were marched out of the station and into a waiting 39-seater coach.

This was the start of the West Essex Wing Air Training Corps Annual Summer Camp, last year held at RAF Odiham, home of the RAF's largest operational helicopter base, housing Nos 33 (Puma), 72 (Wessex), and 230 (Puma) Squadrons.

On arriving at the base the cadets, all aged between 13 and 18, were greeted by a notice, 'Home of the Battlefield Helicopters'. They were then allocated to their tents and their belongings packed into the lockers. After drawing their bedding the Camp Commandant, Squadron Leader G. Henrico, together with the camp Air Cadet Liaison Officer, outlined the itinerary of the week's events. As at every summer camp the squadrons present would compete for a prize presented at the end of the camp.

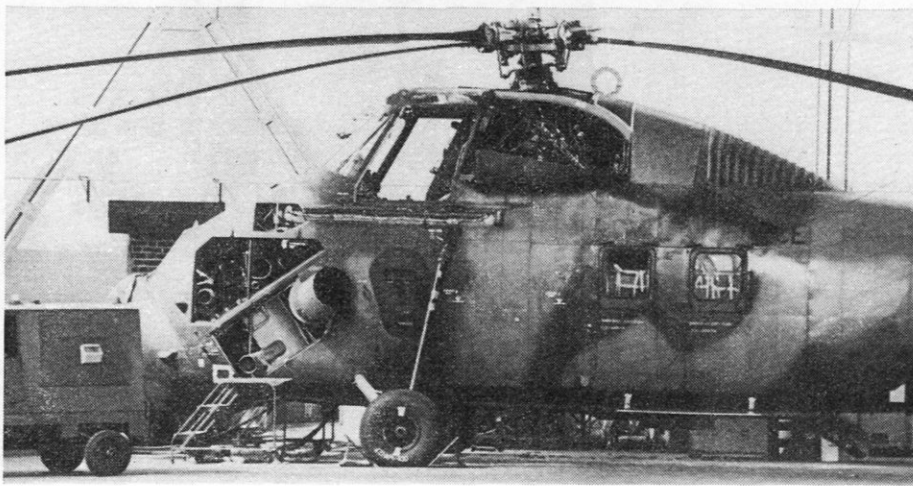
After this the cadets were marched around to the mess for lunch, arriving late after the inevitable 'finding of the mess'. The food was of unusually high standards, which they enjoyed. After a good meal, they had the rest of the day off to look around the camp, and eventually all found themselves at the NAAFI playing billiards, darts, table tennis or watching one of the three colour televisions.

The following day (Sunday) the cadets attended their respective church services, a thing the ATC always put in at camp. After lunch came the first exercise, one on orienteering. Each squadron was given a map and a list of questions and told to roam around the local countryside answering the questions. After two and a half hours of fast roaming the cadets soon realised how unfit they were. Again after tea everyone changed into 'civvies' and had the run of the camp, and the outlying towns, until lights out at 10.30.

Monday saw the start of the camp activities, when the cadets were first

Continued on page 518

Below A Chipmunk sets off at the beginning of an Air Experience flight. Bottom A stripped-down Wessex HMC 1 of 72 Squadron in one of the hangars.



CRUSADER

Classic AFVs No 1

Their history and how to model them

by John Milsom,
John Sandars and
Gerald Scarborough

THIS LAVISHLY illustrated book is a detailed record of the development and active service life of the famous British Crusader tank, and includes full details on modelling and converting Airfix's 1:32 scale plastic construction kit of a Crusader III.

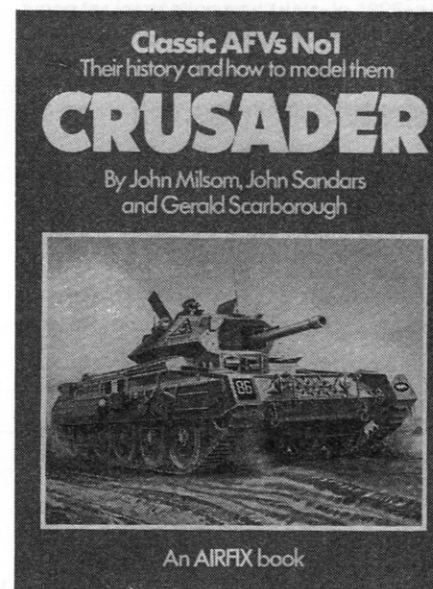
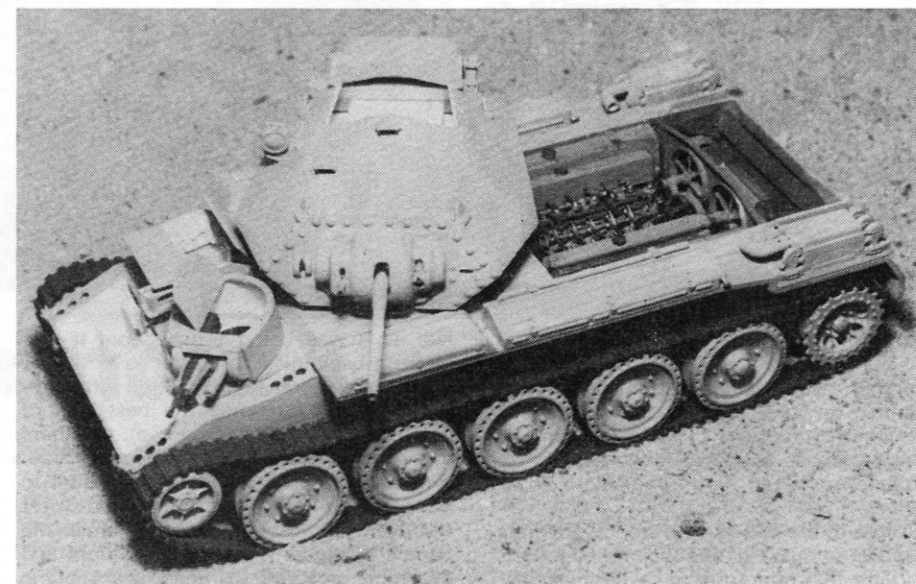
Part one, by John Milsom, describes the Crusader's development from the earlier A13 and Covenanter Cruiser tanks through three main marks and a number of special variants, and includes two pages of data tables and a definitive technical description of the tanks' construction. Equipped with Christie-type suspension and powered by a 340 hp Nuffield Liberty engine, the Crusader was capable of speeds of up to 27 mph over flat terrain, making it one of the fastest tanks of World War 2 and an ideal vehicle for the wide-ranging Western Desert battles.

The early Crusader Marks I and II were fitted with 2 pdr guns, but the definitive Crusader III which saw action at El Alamein mounted a 6 pdr. The performance of all three marks in the 8th Army's battles against Rommel's Afrika Korps between 1941 and 1943 is well described in part two of the book, by John Sandars, and illustrated with maps and tactical formation diagrams.

Although outclassed as a main battle tank by 1943, the basic Crusader design was adapted into various anti-aircraft tanks as well as a tractor for the 17 pdr anti-tank gun, all of which were used in Europe after D-Day.

In the book's third section, expert modeller Gerald Scarborough shows how to add complete internal detail to the Airfix 1:32 scale kit, including a scratch-built Liberty engine as can be seen in the photo here, and how to convert it back into a Mk II or Mk I with the small auxiliary turret. He also includes details, photos and plans for modelling one of the anti-aircraft versions, and plans for a Crusader camouflaged as a lorry in the desert.

Throughout, the text is profusely illustrated by numerous clear photographs of all Crusader variants, as well as scale and camouflage scheme drawings, diagrams and illustrations from an actual Crusader handbook, making this an ideal book for all military historians and AFV enthusiasts wishing to broaden their knowledge of this important tank as well as for modellers working from the Airfix kit. 80 pages, 9 5/8" x 7 1/4", 117 photos and 51 line drawings. Case bound with full-colour laminated cover. £2.50 net.



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A5/76



Continued from page 516

marched round to the Fire Section for a lecture on fire fighting in tents and demonstrations until 11 o'clock when the first party was allocated to go over to 33 Squadron for an hour-long flight in a Puma.

Three of the cadets who went were later discovered missing, and when they turned up later that afternoon to reveal that they had been at 33 Squadron flying all day, they were instantly grounded for four days because the whole camp had been looking for them. So the ATC is not lacking in discipline.

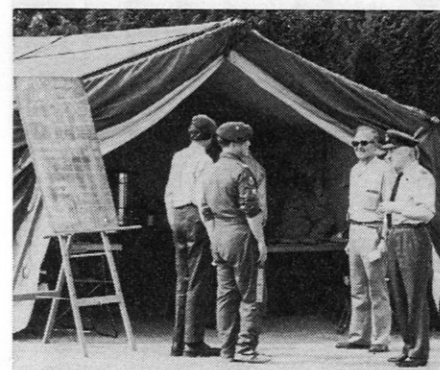
After tea the cadets went over to the NAAFI to see 'Airport 75', that was specially laid on for them.

On Tuesday, the section visits were arranged, and the cadets went to the sections of their choice all day. I went to the Photographic Section with another cadet and spent the whole day taking photographs and developing them. One of them was of a 230 Squadron Puma having its undercarriage repaired. The night before it had been on a night flying exercise with four cadets on board, when the hydraulics failed and the helicopter couldn't land. The four cadets had to jump, and then, after about 45 minutes, it was able to land on sandbags.

Every day the tents were marked on the cleanliness of the occupants, everything had to be spick and span, but it was fighting a losing battle, the dead grass was blowing into the tents continuously and as

fast as it was being brushed out it was blowing back in!

Wednesday was the day of the raft building exercise, for some the best part of camp (next to flying of course), to others the worst. The object was for each squadron to construct a raft and each cadet to paddle 75 yards up river, against the clock. At the end of a very successful exercise the cadets indulged in a pond weed fight and everyone, covered in weed, went home happy (except one cadet who, much to the delight of everyone else, stepped back-



Top of page A 72 Squadron Wessex HMC 1. **Above** The orderly tent, with the inter-squadron competition scoreboard on the left. **Below** A 230 Squadron Puma provides the background for this camp photo.

wards into the Basingstoke canal, whilst watching a Puma fly overhead).

On Thursday, the cadet force was split up, a large percentage going to Portsmouth for the day while the rest stayed behind for Families' Day. They sold programmes, RAF year books and generally made themselves useful by helping on stalls. They also watched the air display, and one even clocked up five minutes in a Wessex by playing the part of a casualty during a Casevac display.

As usual that night was night flying which everyone enjoyed, as it was a new experience flying over Basingstoke in the dark, for everyone except the three grounded cadets.

All during the week were the usual Air Experience flights in a Chipmunk, every Air Cadet at one time in his life has or will fly in the old Chipmunk, which has been in service with the RAF for 16 years now.

Friday was the last full day at camp, and saw the sports finals. In the nearby gymnasium, fast and furious games of five a side football were being played, whilst outside in contrast on the grass the slower game of cricket was also being played. A night exercise was scheduled for later that night but due to the rain and wind, that washed out all the previous night exercises, it was called off, so the cadets went and played football in the gymnasium. As well as Puma flying throughout the week, Wessexes from 72 Squadron were also available, so with the amount of flights being arranged it's not surprising that some of the cadets clocked up five or six hours. Usually at camp cadets only get 40 minutes so it was a great camp for flying.

On the last day, Saturday, everyone was up early and packed before breakfast, as they boarded the coach you could see the contentment on their faces.

So ended the 1975 summer camp, the cadets trudged wearily to the train and as a week of incessant tent raids, pillow fights and getting up at 6.30 took its toll, most of them fell asleep on the journey home.

Not all the ATC summer camps are as good as this, but it is plain to see why the camp is the highlight of the Air Cadet year.

The ATC is an organisation directed at boys aged between 13 and 18, and enables them to see the RAF how it really is, and live up to their standards. Any reader interested in knowing more should write to Squadron Leader M. R. Burroughs, RAF, HQ Air Cadets (522ZX2), RAF Brampton, Huntingdon, who can supply a leaflet and the address of your nearest local squadron.



Finnish armour

1939-1945 described by Steve Zaloga and Karl Rosenlof

THE FIRST Finnish experience with armour came in 1919 when small numbers of 'Russki-Fiat' armoured cars were captured from Russian Bolshevik Forces. Like most of the newly independent nations of eastern Europe, Finland soon became a military client of France and, in 1919, military advisers and credit were made available. The Finns wasted no time in setting up an armoured force, and in October of that year organised the *Hyökkäysvaunurykmentti* (HVR, or tank regiment) which was composed of 32 Renault FT-17/18s sent from France. Of these tanks, 14 were armed with the 37 mm Puteaux cannon and the remaining 18 with a Hotchkiss heavy machine-gun. By the time the HVR reached operational status, the anti-Bolshevik conflict was coming to a close, and the Renaults probably saw no action.

Finland's meagre military budget during

the inter-war years did not permit the modernisation of her small tank force and the HVR officers had to content themselves with purchasing single examples of foreign types for inspection and trials. In 1925, a St Chamond tankette was purchased and in 1933 a Vickers Armstrong Medium, a Carden Lloyd Mk VIB tankette, a Carden Lloyd 4-ton amphibian, a Carden Lloyd 4.5-ton 'Patrol' tank and a Vickers Armstrong 6-ton Type E export tank.

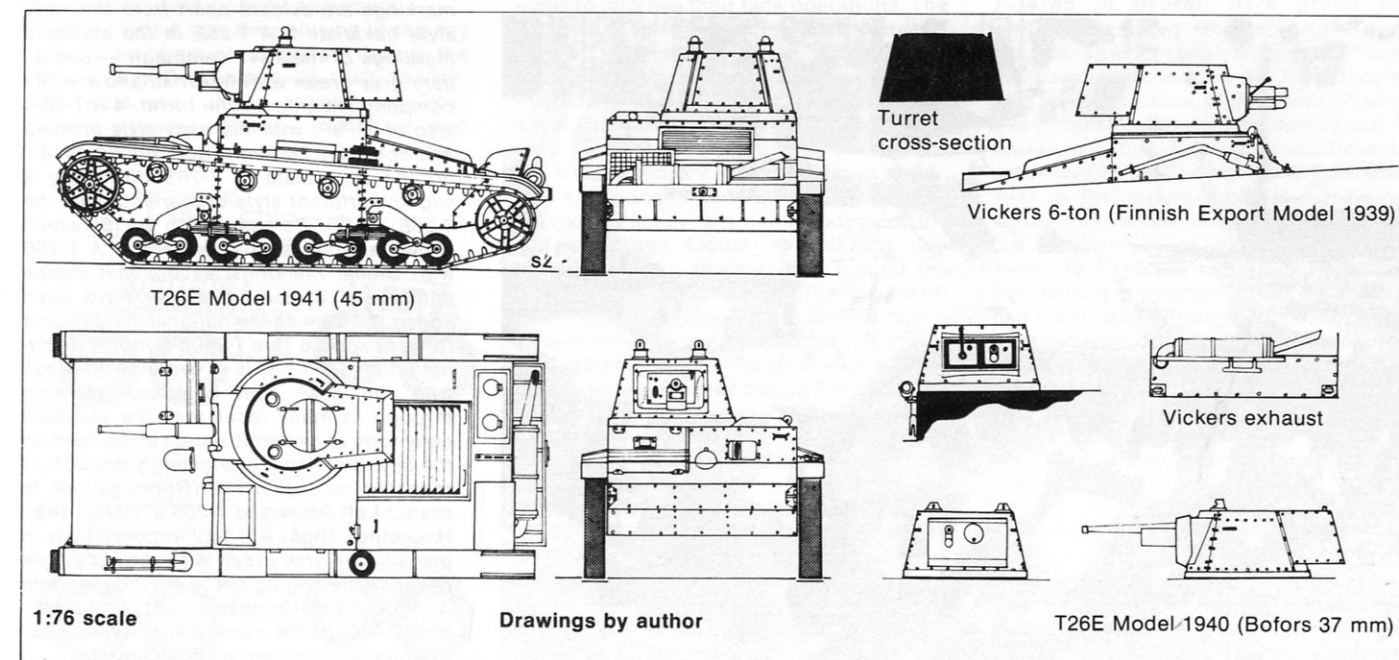
Trials were conducted with these vehicles but it was not until the tense days of 1938 that the military budget was expanded sufficiently to allow for the purchase of any significant number of tanks. With the threat of war becoming greater, Finland ordered 16 Vickers Type E (later increased to 32) for tank units, and a small number of Landsverk 181 armoured cars for the *Rat-suvaiprikaatin* (Cavalry Regiments).



Above left T26E in wartime markings preserved at the Finnish tank museum, Parola (Karl Haugsted). **Above** Map showing Finnish advances in 1941.

The Vickers Type E 6-ton (Finnish export Model 1939) was built in England, but the armament was added in Finland. The Finnish Model 1939 differed only in detail from other export models, such as in the types of viewing devices fitted in the mount for the Marconi SB-4a radio. In order to assure compatibility with the Renault FTs, the Vickers was equipped with the same Puteaux SA 17 37 mm gun, and a Hotchkiss MG.

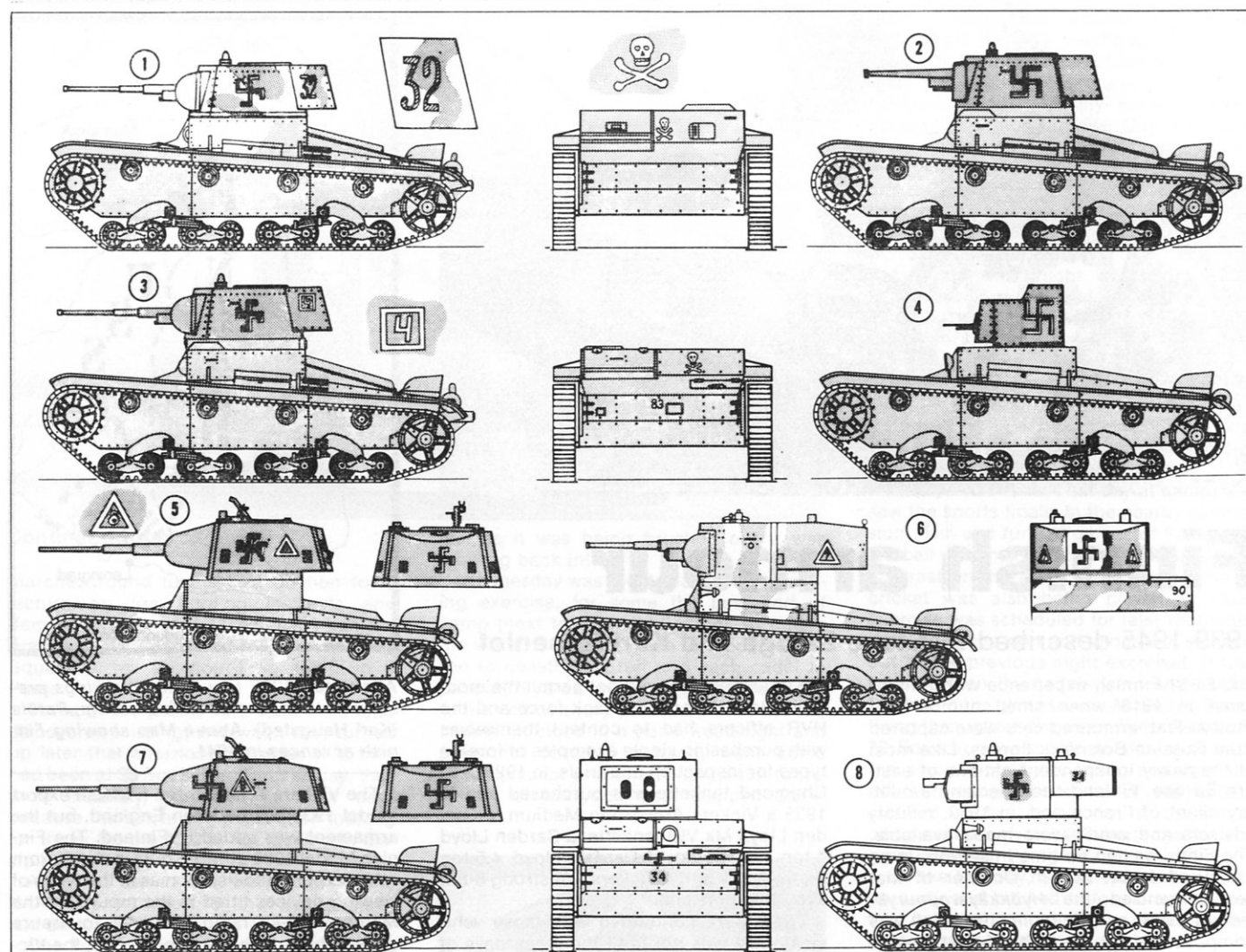
In the autumn of 1939, the Soviet Union demanded that Finland cede large portions of the Karelian isthmus north of Leningrad in exchange for some worthless scraps of land in the Arctic Circle. The Finns refused and in November the Russians provoked



1:76 scale

Drawings by author

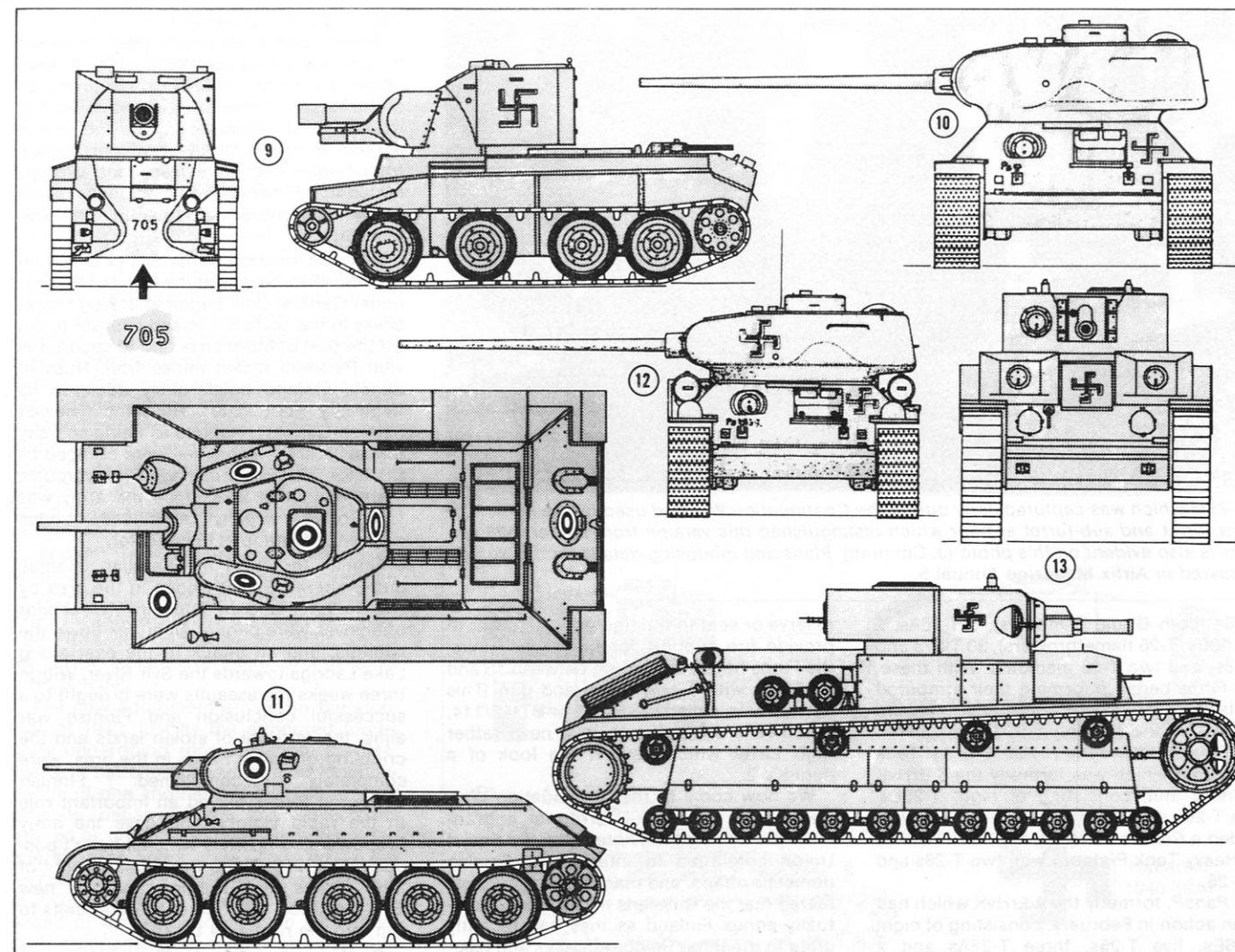
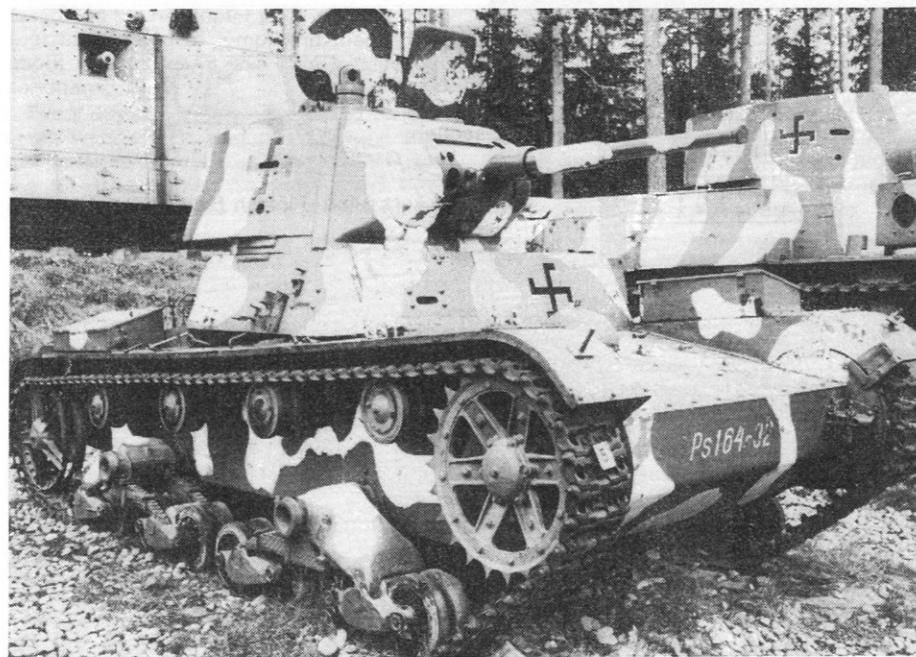
T26E Model-1940 (Bofors 37 mm)



the first Russo-Finnish War. The confrontation pitted a tiny but spunky army of reservists against a large, well equipped but inept Soviet army. Finland's small armoured force of 59 tanks was faced by over 1,500 Russian AFVs. At the outbreak of the war the Finns had five *Erilliseksi*

Hyökkäysvaunukomppaniaksi (ErHvK, independent tank companies). The 1 ErHvK and 2 ErHvK were both equipped with 14 Renault tanks, but the Finnish High Command was understandably reluctant to commit these old dinosaurs to action. The 3 ErHvK and 4 ErHvK were to be equipped

Key to drawings above. 1 T-26E in overall grey-green with sloppy white overpaint and a red turret rear number. This vehicle was photographed in Viipuri in 1944 and carried the standard *hakaristi* on the turret side and rear. 2 This T-26E belonged to the 3rd Tank Company, circa 1941, whose insignia was a white skull and crossbones. No other markings are evident apart from the early style *hakaristi*. 3 A T-26E in the standard markings of the 1941 campaign — overall dark grey-green with *hakaristi* and a white company insignia on the turret. 4 A T-26A, also of 3 PsP, with the early style insignia and company marking. Note the white '83' on the bow plate. 5 T-26S displaying a slightly different style of marking from the T-26E in (3). Compare also to (6) which shows another similar pattern. 6 A T-26B with similar markings, except that sloppy patches of winter whitewash have been added. 7 T-26 with the national insignia in a forward spot. 8 This T-26Lh (Finnish designation for OT-130s) is in overall whitewash with the base coat of green showing through in many locations. The standard early form of two digit serial can be seen on the bow plate and, interestingly enough, is repeated on the turret. (Drawings not to scale.) **Left** Preserved T-26S at Parola (Karl Haugsted). **Right** A BA-32 armoured car in overall dark grey-green with the early style *hakaristi*, belonging to the 7th Independent Armoured Car Company, 1941, and a second BA-32 in the same basic scheme but irregularly splotted with whitewash.



with the 32 Vickers that had been ordered, but there were serious delays in delivery and in arming them once they had arrived in Finland. Eventually 27 arrived, but only about half were armed as of February 1940. A handful went to 3 ErHvK, and 4 ErHvK received its full complement of 16 tanks. The remainder went to 5 ErHvK, a training unit, while awaiting their armament.

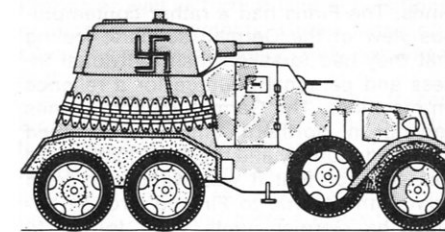
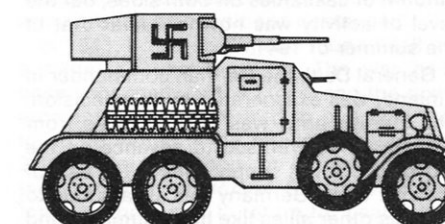
The 4 ErHvK was the only unit to see any significant amount of action during the Winter War. On February 25 1940, 13 Vickers were used in an attack from Honkaniemi towards Viipuri. The attack was not successful due to the poor perfor-

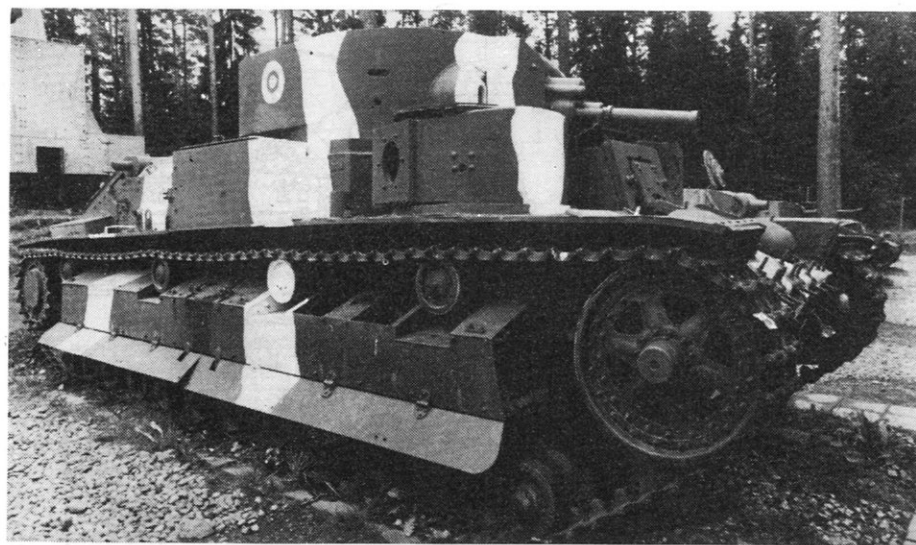
mance of the Vickers in snow, difficulties in co-ordinating the attack with the infantry, and inadequacies of the Puteaux gun against Russian tanks like the T-28 medium. The 4 ErHvK suffered serious losses, only about half its tanks surviving. The Finns took the appropriate lessons from the Honkaniemi attack and undertook steps to improve their tank operations. The problem of mobility in snow and co-ordination of tank-infantry attack was solvable through training, but the problem with the Puteaux armament was more difficult. The small Finnish arms factories could produce only a very limited number of shell types, but it was apparent that the Puteaux had to be abandoned as the standard tank weapon. Initially the Finns adopted the Bofors-Madsen Model 36 anti-tank gun which was also the standard gun of the Swedish and Polish armies. These were fitted in small numbers to the Vickers with a new mantlet very similar to that designed by Landsverk for the Polish 7TP tank. None of these were finished before the war came to a close, and after the war enough Soviet Model 36 45 mm AT guns were available to be adopted as the standard tank weapon. Mantlets were taken from burned out T-26s, and the modified Vickers were called T-26E (not as odd as it sounds, since the T-26 was derived from the basic Vickers design).

The Winter War left the tiny tank force bloodied but experienced, and on the verge of a major expansion. During the

Key to drawings above. 9 A BT-42 in overall green serving with the Independent Heavy Tank Company during the opening phases of the Continuation War in 1941. Note the early style serial on the bow, '705' in white. A colour photograph of the BT-42 preserved at Parola was featured on the front cover of our June 1975 issue. 10 A T-34/85 in overall dark green with whitewash sloppily smeared on the turret. The later style Ps serials were carried under the bow machine-guns on T-34s, but the number wasn't clear in the photo on which this scheme is based. This vehicle did not undergo the factory modifications described in (12) below. 11 A T-34 Model 1941 in the standard post-war markings. Again, this vehicle had few modifications, but was in mint condition even into the 1950s. 12 A T-34/85 with a badly weathered overall dark grey-green finish. This vehicle had Finnish-style fittings added, consisting of a stowage box on the hull rear, reinforced fenders and early style Russian-type retractable lights added to the fenders. 13 This T-28M Model 1940 is in the standard markings and served with the Heavy Tank Regiment in the opening phases of the 1941 war.

war, over 1,600 Russian tanks had been captured or knocked out, and the best examples of these were sent to factories in Finland for rebuilding. They consisted of 42





A T-28M which was captured early during the Continuation War and used by the Finns. The extra turret and sub-turret armour which distinguished this version from earlier T-28 variants is also evident on this photo (J. Cochran). Plans and modelling details for this vehicle appeared in Airfix Magazine Annual 5.

T-26s (both B and S models), 5 T-26As, 5 OT-130s (T-26 flamethrowers), 30 T-37s and T-38s, and two T-28 mediums. With these, the Finns began reforming their armoured units. Four major formations were organised, these being:

1 *Pansaripataljoona* (1 PansP or 1st Tank Battalion) which was formerly the 5 ErHvK training unit, consisting of eight T-26Es, five T-26s and three T-26As, to which was added a *Raskas Panssarijoukkue* (RaskPsJ or Heavy Tank Platoon) with two T-28s and a T-26.

2 *PansP*, formerly the 4 ErHvK which had seen action in February, consisting of eight T-26Es, five T-26s, three T-26As and a Ba-32.

3 *PansP*, a new unit, consisting of 15 T-26Es and T-26s, and a Ba-32 or Ba-30, to which was also attached the 2 ErPansJ with five T-37s and T-38s.

1 *ErPansJ* with five T-37s and T-38s.

The remaining tanks were placed in

reserve or sent to training units. In order to provide fire support for these new units, the Finns began rebuilding between 15 and 20 BT-7s with a new turret and gun. This new vehicle, called the BT-42 or BT-42/114, mounted a 4.5-inch gun in a new, rather high turret which gave it the look of a mini-KV-2.

We now come to the Continuation War. Despite its successful territorial aggrandisement during the Winter War, the Soviet Union continued to interfere in Finnish domestic affairs, and many Finnish officials feared that the Russians had plans to eventually annex Finland as they had recently done to the three Baltic republics and eastern Poland. As the German military was impressed with the performance of the Finnish army in 1940 (as they were unimpressed and overconfident because of the poor Soviet showing) they began to make overtures to the Finnish government in the hopes that it would join in the coming inva-

sion of the Soviet Union.

Finland had traditionally been reluctant to join in any alliance with a major foreign power, but in return for German promises of the return of stolen territories as well as military and economic aid, the Finns agreed to allow the Wehrmacht certain transit rights over Finnish soil, and strongly hinted that Finland would become involved in the war if the Soviets took any provocative steps.

With the invasion of the Soviet Union on June 22 1941, troops of the Army of Norway under General Deitl began attacking Soviet bases in the north of Finland in order to cut off the port of Murmansk and to secure the vital Petsamo nickel mines from Russian attack. Finland boisterously declared its neutrality but the Russians viewed Finnish-German relations as being so fishy that several Finnish cities were bombed by the VVS. The Finns managed to overcome their reluctance and, since the army was fortuitously already mobilised, began offensive operations immediately.

Finnish forces in the Karelian isthmus outnumbered Soviet troops in the area by two to one, and in late July two major offensives were begun: an attack down the isthmus, and an attack to the east along Lake Ladoga towards the Svir River. Within three weeks the assaults were brought to a successful conclusion and Finnish war aims, the retrieval of stolen lands and the crippling of Soviet bases in the area, were completely accomplished. Finnish armoured forces played an important role in the rapid victory, and gave the army firepower and mobility which it hadn't possessed in 1940. There was a fair amount of tank versus tank fighting and the new BT-42 platoon was one of the first units to run into the new T-34 tanks.

By the end of August, Finnish forces in the south halted offensive operations, though several Finnish infantry units continued to assist the German mountain troops concentrated in the north. In November, the Finnish army was actually reduced in size. Nearly one seventh of the whole Finnish population served in the armed forces and this caused severe economic dislocation. Continued offensive operations would have strained Finland's limited resources and, as the war aims had already been satisfied, the Finns decided to sit back and wait for the Soviet Union to collapse. Hostilities continued all along the front during this period with no small amount of casualties on both sides, but the level of activity was nowhere near that of the summer of 1941.

General Deitl, the German commander in Finland, was exasperated by this decision. The Finnish army was only 30 miles from Leningrad, but refused to advance on the city or cut Soviet supply lines to the east of the city. While Germany was always able to bully its other allies like Italy, Rumania and Hungary, this was never possible with the Finns. The Finns had a rather contemptuous view of the German soldiers, feeling that they had forsaken their individual fitness and personal courage for a reliance on machines. The German mountain units serving in northern Finland performed barely adequately and the SS Brigade Nord was so poor that it was withdrawn from service there. Due to Finland's rough terrain, the German units were forced to



operate without the usual logistical support, and many soldiers could not take the gloomy and despondent atmosphere of Finland's sub-Arctic marshes and forests. The German units in Finland were always forced to rely on the Finns for aid in carrying out any major operation, and the Finns agreed only when it suited their own purposes. For instance, the German attacks towards Murmansk never succeeded because of American success in convincing the Finns not to assist an attack on this port, one of the principal entry points for US Lend-Lease shipments to the USSR.

The Finnish armoured forces saw only limited action during the years of positional warfare from November 1941 to June 1944, though they were used in a number of forays into Soviet territory. As the war dragged on, the Soviet tank units became technologically more advanced and the small T-26s had more and more encounters with T-34s and KV. As few Finnish tanks could hope to match these new machines, efforts were made to obtain more modern equipment. The Germans were so annoyed at the Finns that they initially rebuffed the requests, but eventually sold Finland 30 StuG IIIs (known to the Finns as Sturmis). The Finns also managed to obtain about ten ITPSV 40 Landsverk anti-aircraft tanks from Sweden.

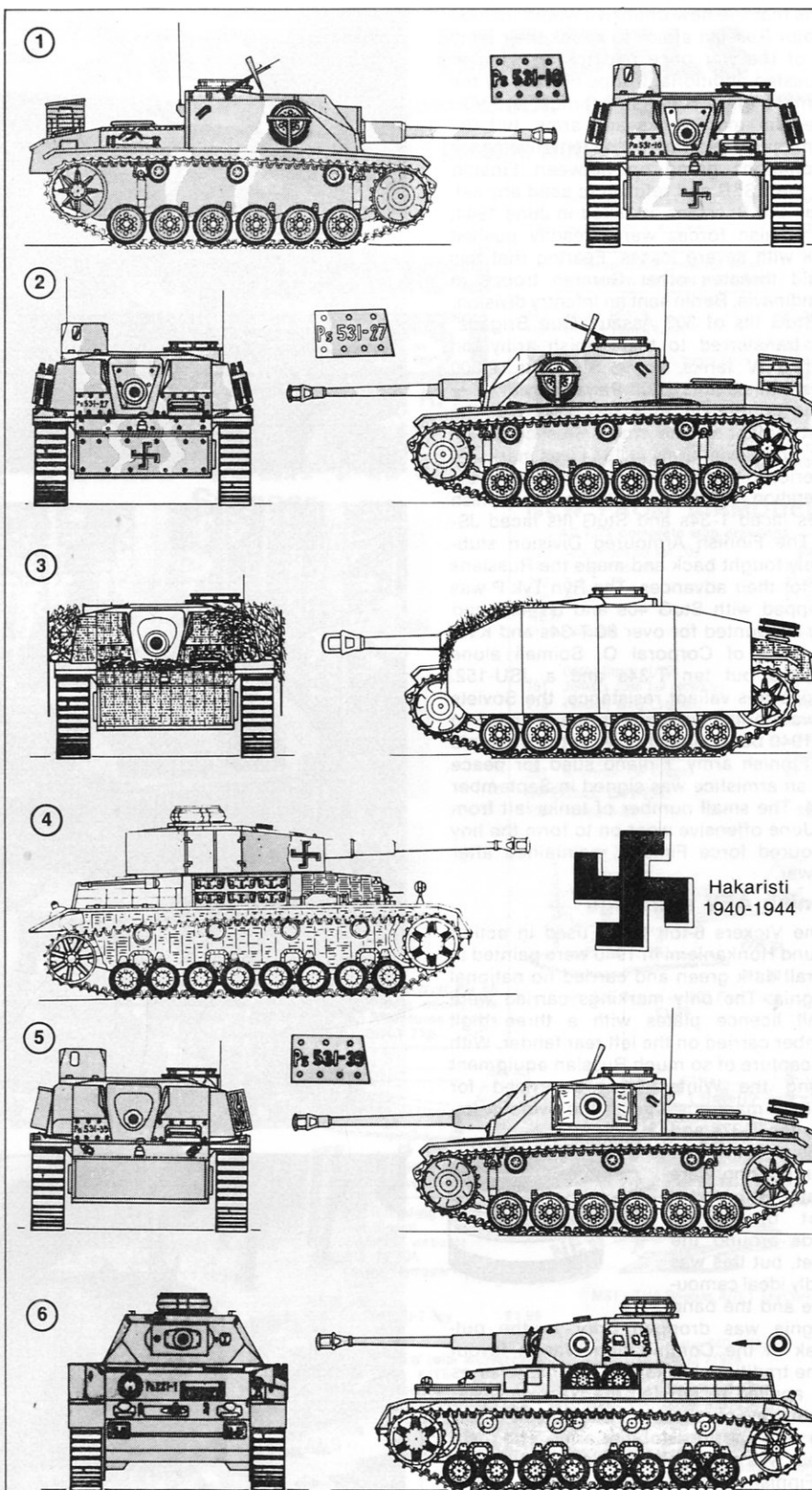
The new equipment arrived in the summer of 1943, just as the armoured forces were undergoing reorganisation. In 1941, the tank battalions had operated independently of one another but by 1943 military officials began to see the advantages offered by unified command and concerted operation of these units. This led to the formation of the Finnish Armoured Division in August of 1943. The new division consisted of three brigades, each with three tank companies for a total of about 190 tanks. The third brigade, known as the E/Rynn Tyk P (Independent Assault Gun Brigade) was formed with the new StuG IIIs and the older BT-42s. The divisional strength in March of 1944 is shown in the table here:

BA-20: 18	T-34: 2
BA-32: 2	T-38: 4
T-28: 6	BT-42: 14
T-26B: 53	Stu 40: 29
T-26S: 24	KV-1: 1
T-26E: 21	ITPSV: 6
T-50: 1	

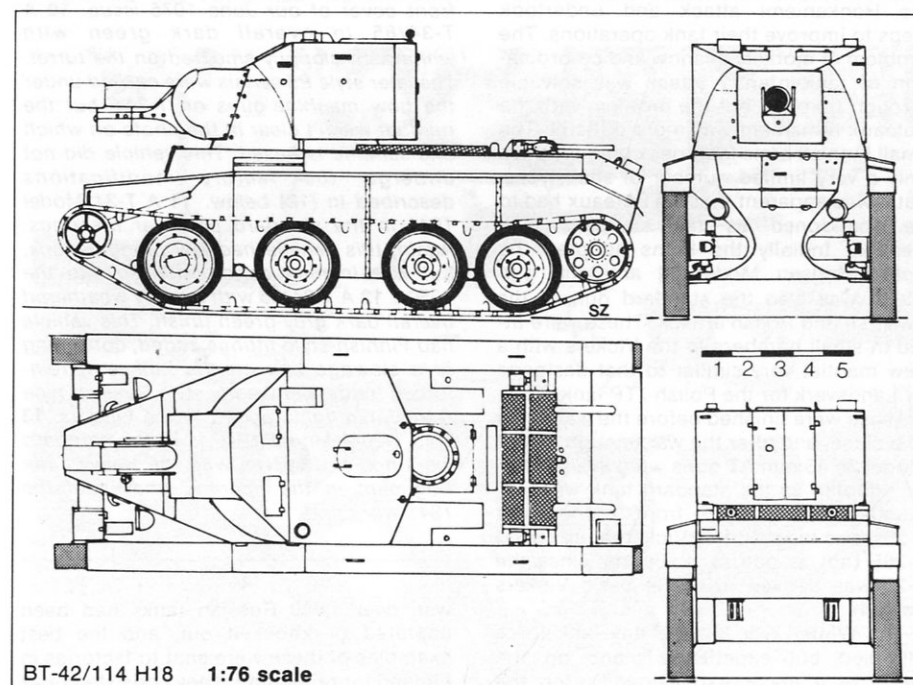
In addition there were a number of small independent tank units attached to various army groups as conditions demanded.

In 1943, however, Finland found itself in a rather peculiar position. The war had been very costly to the Finns, and the government seriously desired to pull out. Yet to do so would invite retaliation from the 200,000 German troops on Finnish soil and the likely intervention of Soviet forces to 'protect' the Finns. In return for peace, the Russians demanded the contested territories as well as further land acquisitions or reparation payments. Under these circumstances, Finland reluctantly remained in the war.

In the spring of 1944, Russian forces around Leningrad prepared to go over to the offensive and shatter the tattered remnants of the German troops who had besieged the city for three years. It was becoming more and more apparent to the



1 A StuG III of the Ryn Tyk P during 1944 in standard dark grey-green with buff stripes. The serial was carried on the hull front in white. 2 Another StuG III similar to (1). Note that Finnish StuGs carried Degtaryev MGs in the AA position instead of MG34s. 3 This StuG 42 with Saukopf mantlet was one of a small number of vehicles transferred to the Finns by the Wehrmacht in the summer of 1944 in a forlorn attempt to bolster the Northern Front. 4 This PsKpFw IVH 'Nelonen' was another one of the vehicles transferred in June 1944. The zimmerit was carried on the hull front as well, and the vehicle is in overall sand like (3) except for a repainted patch on the turret which may be green. 5 This StuG III survived the war and served with the Finnish army well into the 1960s. Many small fittings were added such as the stowage boxes on the superstructure. 6 This PzKpFw IV also served with the post-war Finnish army and some small fitting alterations are evident.



BT-42/114 H18 1:76 scale



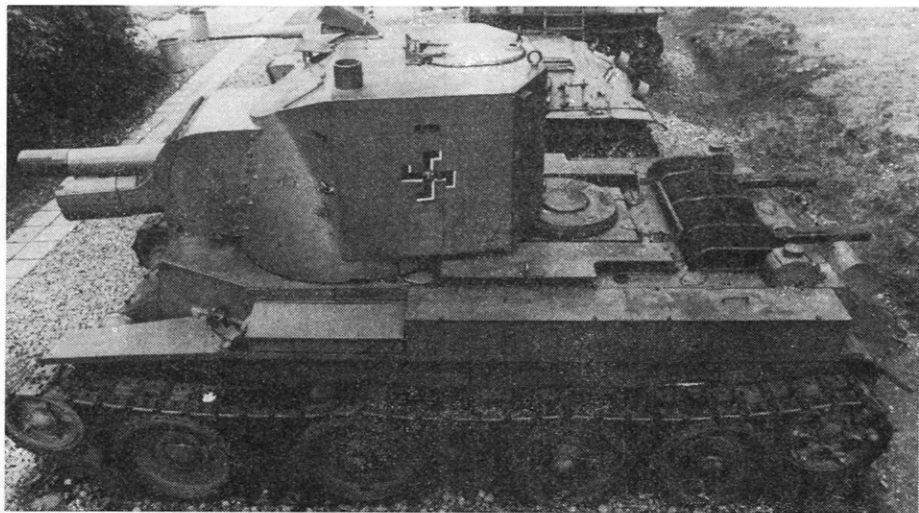
Finns that the new offensive would include a major Russian attack to knock their army out of the war once and for all. Finland requested additional troops be sent by the Germans to the Karelian isthmus, and also asked for more tanks and arms, but the Germans were aware of the tentative peace negotiations going on between Finland and the USSR and refused to send any aid. When the Russians attacked in June 1944, the Finnish forces were steadily pushed back with severe losses. Fearing that this would threaten other German troops in Scandinavia, Berlin sent an infantry division, 30 StuG IIIs of 303 Assault Gun Brigade, and transferred to the Finnish army ten PzKpfw IV tanks, some StuG IIIs, 9,000 Panzerfausts and 5,000 Panzerschrecks.

The fighting in June-July 1944 was the most violent of the whole Russo-Finnish War. The Soviet army in 1944 was markedly superior to that of 1940 and its tanks were a generation ahead of Finnish vehicles. Finnish T-26s faced T-34s and StuG IIIs faced JS-2s. The Finnish Armoured Division stubbornly fought back and made the Russians pay for their advances. The Ryn Tyk P was equipped with StuG 40s and BT-42s, and they accounted for over 80 T-34s and KVs; the StuG of Corporal O. Soimäli alone knocked out ten T-34s and a JSU-152. Despite this valiant resistance, the Soviets in two months were able to push ahead to the 1940 boundaries and effectively cripple the Finnish army. Finland sued for peace and an armistice was signed in September 1944. The small number of tanks left from the June offensive went on to form the tiny armoured force Finland maintained after the war.

Finnish AFV markings

The Vickers 6-ton tanks used in action around Honkaniemi in 1940 were painted in overall dark green and carried no national insignia. The only markings carried were small licence plates with a three digit number carried on the left rear fender. With the capture of so much Russian equipment during the Winter War, the need for national markings was all too evident. Initially the T-37s and T-38s of 10th Light Tank platoon were painted with white/light blue/white bands around the turret, but this was hardly ideal camouflage and the band insignia was dropped prior to the outbreak of the Continuation War in favour of the traditional *hakaristi*. The *hakaristi* as first applied resembled the Nazi swastika, but this eventually was modified to a version with shorter, stouter arms. The main colour was a dark blue or black (unlike that of Finnish aircraft, which was a lighter blue) and the *hakaristi* was shadowed with white. It was carried on the turret side and rear, the glacis plate and occasionally on the hull rear of certain types. It was not carried on the hull sides, even on types like the StuG III. Another frequent location for the *hakaristi* was on one of the turret top hatches.

Besides the national insignia, white serial numbers were normally carried on the hull front and rear of the glacis plate. Beginning in 1941, this took the form of a two or occasionally three digit number. In



Facing page, top BT-42 preserved at the Finnish armour museum. Besides the obvious turret conversion, note also the addition of long stowage boxes on the fenders (J. Cochran). Centre PzKpfw IV in post-war markings providing a great 'toy' for younger visitors to the museum (Karl Haugsted). Bottom Preserved StuG III, also in post-war markings (Karl Haugsted).

1944, a new system was introduced, with each tank type being issued a three digit number, followed by a one or two digit number identifying the individual vehicle (eg a PzKpfw IV had the code Ps 221-11).

T-26E: Ps 161 StuG III: Ps 531
T-26B: Ps 163 JSU 152: Ps 745
T-26S: Ps 164
T-50: Ps 153
PzKpfw IV: Ps 221

ITPSV: Ps 455 Ba 20: Ps 3
BT-42: Ps 511 Ba 32: Ps 1
STZ tractor: Ps 755

Aside from the national insignia and serial number, few other markings were carried. Many T-26s had white numbers inside small geometric symbols, and these were probably some form of regimental insignia. StuG IIIs made some use of white bands on the barrel for kill markings.

Nearly all Finnish vehicles in the Continuation War were painted in a dark grey-green. Most captured Russian equipment was remanufactured and painted before being issued to the troops and even the StuGs and ITPSVs obtained in 1943 were repainted in the grey-green (with light buff striping). During winter months, most armour received a white wash with varying degrees of sloppiness.

Tank crews in 1940 wore Finnish patterned uniforms, but in the Continuation War usually wore a hodge-podge which was invariably topped off with a standard Russian tankerman's helmet. Outside the tank, a Finnish soft cap, or even a German helmet, was worn.

In 1945, Finnish armour went over to the white disc with blue 'doughnut' (also used on the aircraft) and retained the 1944 style serial number. The illustrations here show several of the World War 2 era vehicles that saw service in the post-war years. They were eventually supplanted by British Comets, and later by T-54s and PT-76s. But then, that's another story.

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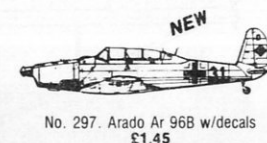
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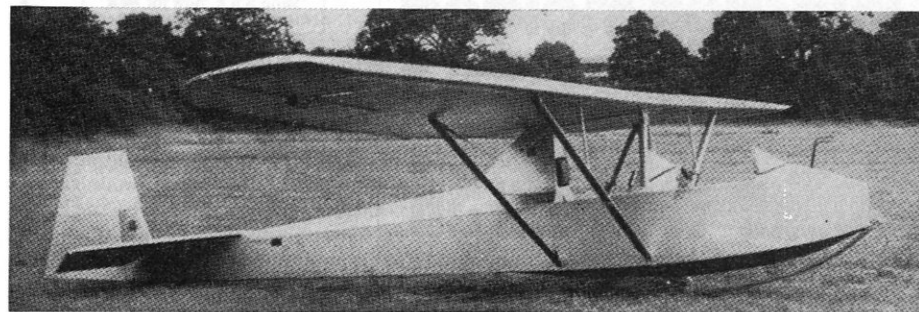
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Kirby Cadet Mk III in 1:72 scale

Modelling an Air Cadet glider
described by Tim Perry



THE CADET, together with the Sedburgh glider (to be covered in a future article), form the mainstay of the RAF Gliding Schools. These schools, based at RAF stations across the country, take on ATC and CCF cadets for various courses, the initial course lasting about four days. During this period each cadet can expect, weather providing, up to 40 launches, while he can go solo after 25, depending on his progress. The course involves primary and secondary effects of controls, stalls, strange attitudes from which the cadet must extricate himself, and most hair-raising of all, practice cable breaks. Then three solo flights are made, qualifying the cadet for a proficiency certificate, his gliding wings and glider pilot 'B' licence.

To make the glider, first study the drawings and familiarise yourself with the shape of the aircraft. Then cut a central fuselage spine from 30 thou plastic card to the shape shown in Fig 1. The rearward facing projections on the front face of the cockpits are supports for the instrument panels. Cockpit floors, backs, seats, instrument panels are cut from 20 thou card and cemented in position. Notice the rear (instructor's) seat back is extended to form the leading edge of the wing pylon.

Then five pairs of fuselage frames are cut from 30 thou plastic card and cemented either side of the central spine; these will support the fuselage skins on the rear half of the fuselage, the cockpit backs and floors doing this job forward of the pylon. The sizes of the frames and their positions are shown on the drawing. Make sure they are accurately cut out and are at right angles to the central spine (this of course goes for all other parts of the model as well).

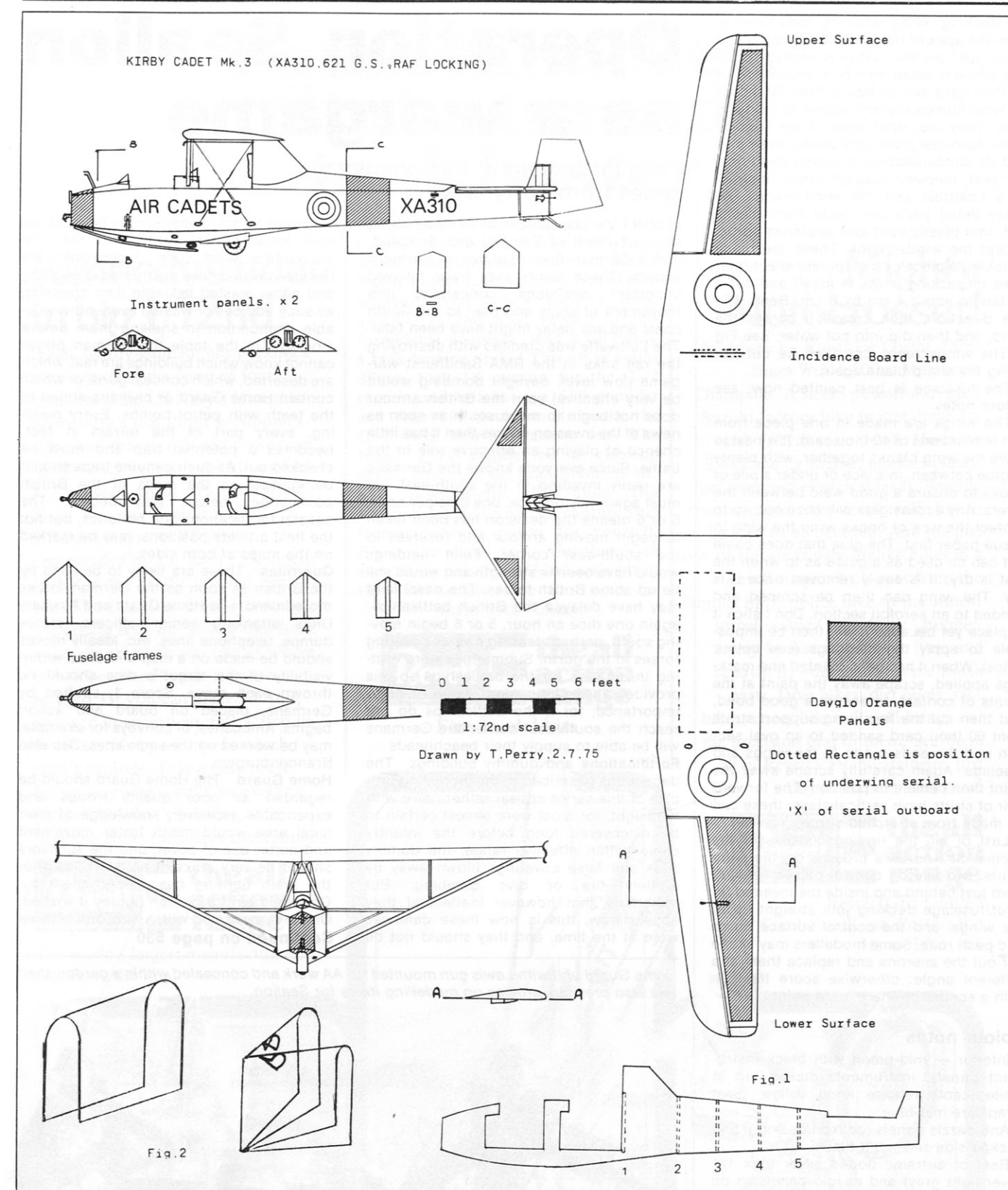
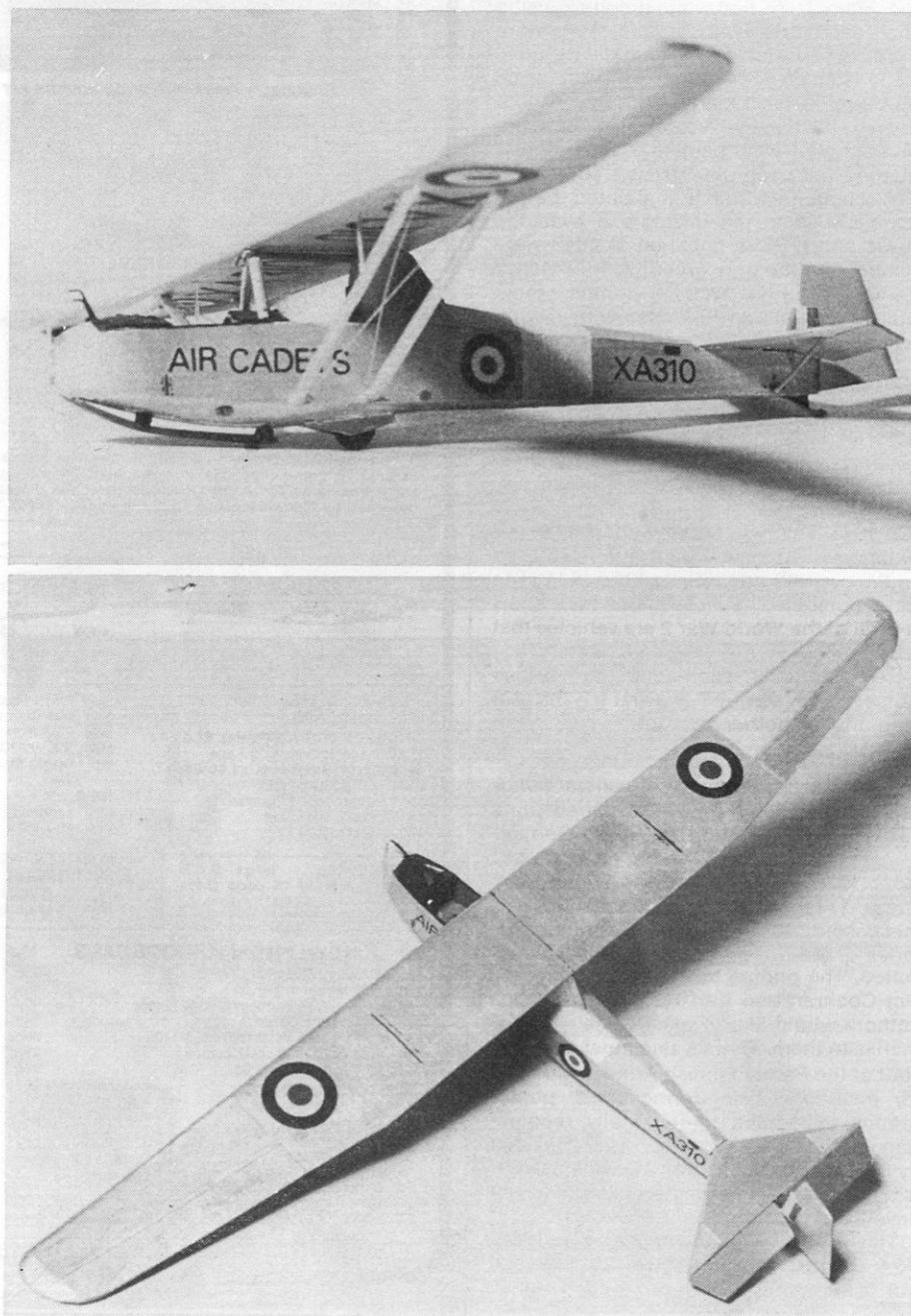
Now laminate a block on to the nose using 30 thou card, the same size as the dayglo panel, and when thoroughly dry carve to the shape in the drawing; this is far easier than trying to build up the shape from flat sheet. The cockpit decking can be cut out and cemented in position at this stage, being supported by the nose block, instrument panels and cockpit back.

The rear fuselage decking is now cut out, slotted to fit around the pylon spine, and folded to lay on the top edges of the frames. Notice the decking is cut in one piece of 10 thou card and extends from the

back of the pylon front face (inside the pylon) to the leading edge of the tailplane. The rear fuselage under surface is similarly treated but is flat, ie not folded along its centre-line, and extends from above the wheel box (dotted line on under side view) to the rudder hinge line. It is slotted to fit around the curved nose under surface spine, and can be cemented to the floor of the rear cockpit.

The fuselage sides can be cemented in place now. Cut a strip of 10 thou card about 10 cm long and 2 cm wide. Mark the 5 cm point and cement it to the very front of the nose block. Then bend the strip around the fuselage, cementing the skin to the decking, cockpit floors and backs, frames as each one is reached. When it has reached the rudder hinge line, the end of the spine,

Left Cadet in plain overall doped silver finish. **Below** two views of the author's model in Air Cadet colours with RAF roundels, dayglo stripes, etc.



it can be pinched together with a clothes peg and left to dry. When completely dry the excess material is trimmed away with a sharp, preferably brand new, blade. The bullet-shaped top of the pylon is now cut out and cemented in place, and the sides, which are curved, cut out and glued in position; their shape is found by trial and error and remember to bevel the edges to obtain a good join between them and the fuselage decking, pylon spine. The pylon sides fit outside the front face, so allow for

the thickness of the plastic card.

The trial and error method must be used again to produce the nose under surface; by cutting a rectangle of 10 thou card approximately 8 cm by 3 cm and cutting one end to the angle on the underside view, between centreline and join line of the nose and tail skins, and then glueing this portion in place. When this is dry the rest of the skin can be cemented to the spine and the side skin. When the cement is dry, trim away the excess with your sharp blade, and

then repeat the process for the other side.

Now the tailplane, elevators and rudder can be cut from 30 thou card, but before fitting them, sand the edges round; this applies to the leading edge of the fin as well. Notice the elevators droop when the aircraft is on the ground, and you may wish to incorporate this on your model. The inverted 'V' struts on the decking between the cockpits are cut from 60 thou card sanded to an oval section and bevelled to fit each other at the correct angle and to fit

the decking. Wing retaining rods running from the apex of the struts to the top of the pylon are from thin rod or stretched sprue. The wheel is made from two laminations of 40 thou card and its box is from 20 thou.

Detail fittings are now added to the fuselage. They are: pitot head, T-bar support tube, Aero-tow hook (the beak), nose skid and its shock absorbers, winch tow hook, tail skid, tailplane support struts, instructor's headrest and the windscreens. All these detail parts are made from plastic rod, thin plastic card and stretched sprue, except the windscreens. These are made by taking a piece of transparent sheet (that used in packing shirts is ideal) and cut a rectangle about 4 cm by 6 cm. Bend it in one direction, then crease it across the bend, and then dip into hot water. See Fig 2. The windscreens can then be cut out using the sharp blade again.

The fuselage is best painted now; see colour notes.

The wings are made in one piece from two laminations of 40 thou card. It is best to leave the wing blanks together, with plenty of glue between, in a vice or under a pile of books to ensure a good weld between the layers. Any excess glue will ooze out, so to protect the vice or books wrap the wing in tissue paper first. The glue that does come out can be used as a guide as to when the rest is dry; it is easily removed once it is dry. The wing can then be scraped and sanded to an aerofoil section. Don't stick it in place yet because it will then be impossible to apply the markings (see colour notes). When it has been painted and markings applied, scrape away the paint at the points of contact, to ensure a good bond, and then cut the four wing support struts from 60 thou card sanded to an oval section and the ends cut to fit the wings and fuselage. Again carefully scrape away the paint then cement in position. The forward pair of struts have vertical stays; these can be made from stretched sprue.

Last of all, the rigging consists of the normal St Andrew's crosses on the wing struts, two aileron control cables running from just behind and inside the inverted 'V' strut/fuselage decking join straight up to the wings, and the control surface horns and push rods. Some modellers may like to cut out the ailerons and replace them at a different angle; otherwise score them in with a scriber or sharp knife point.

Colour notes

Interior — mid-green with black instrument panels, instruments picked out in white, cable release knob yellow. Seat straps are mid-blue.

Anti-dazzle panels (cockpit decking) and cockpit side sills, matt black.

Rest of airframe doped silver (mix 1/1 silver/light grey) and dayglo panels as on the drawing. Dayglo orange can be either commercial transfer or painted on. The RAF roundels came from the Airfix Jaguar (wings) and DHC Beaver (fuselage) while the serial number was from Letraset, although waterslide transfers will undoubtedly suit the bill. The fin flash was hand-painted. Stencils on the upper wing surface, incidence board markers, and on the sides of the front cockpit, trestle points, are hand painted or Letraset. The lifting holes above the fuselage serial number are also painted. □

Operation Sealion as a wargame

Final instalment in this popular series from Terry Wise

FEINTS Various attacks were made along the east coast of England and Scotland, and a German fleet operated in northern waters. These feints may have delayed important decisions concerning the movement of ships and men to the South coast and any delay might have been fatal. The Luftwaffe was credited with destroying the rail links in the RMA Sandhurst wargame (low level, daylight bombing would be very effective) so if the British armour does not begin to move south as soon as news of the invasion arrives then it has little chance of playing an effective role in the battle. Since everyone knows the Germans are really invading in the south-east, we must again rely on dice: one dice per hour, 5 or 6 means the decision has been taken to begin moving armour and reserves to the south-east corner. Feint landings would have been in strength and would still tie up some British forces. The naval feint may have delayed the British battleships: again one dice an hour, 5 or 6 begin moving south, perhaps leaving a small covering forces in the north. Submarines were waiting in ambush for the battleships so this provides an exciting naval game of great importance, for if the battleships do not reach the south-east corner the Germans will be able to supply their beachheads.

Fortifications and dummy buildings The deceptions described in the modelling articles of this series appear rather naïve with hindsight, for most were almost certain to be discovered long before the infantry came within effective range, the dummy sites and false coverings blown away by artillery fire or dive bombing. But remember that however ineffectual they appear now, this is how these defences were at the time, and they should not be

improved for wargames simply because we now know better! Also, after the first encounters with such deceptions, the Germans would have mistrusted everything and either wasted valuable time checking all such edifices or wasted even more valuable ammunition in shelling them before closing. On the table the German player cannot know which buildings are real, which are deserted, which conceal guns, or which contain Home Guard or civilians armed to the teeth with petrol bombs. Every building, every part of the terrain in fact, becomes a potential trap and must be checked out. All such genuine traps should be marked on the maps of the British commander before play begins. The coastal fortifications and batteries, but not the field artillery positions, may be marked on the maps of both sides.

Guerrillas These are likely to be used by the British as soon as the German forces move inland — ie Home Guard and Auxiliary Units attacking senior officers, stores dumps, telephone lines, etc. Ideally moves should be made on a map and once within visibility of the target a dice should be thrown each move. Score 1, spotted by Germans, placed on board and action begins. Ambushes, of convoys for example, may be worked on the same lines. See also Brandenburgers.

Home Guard The Home Guard should be regarded as poor quality troops and expendable. However, knowledge of their local area would mean faster movement and better use of cover, and the survivors should be very efficient as guerrillas after the main fighting has passed them by. Change them for civilian figures if wished. One in three armed with a rifle, one in three

Continued on page 530

Home Guard unit with Lewis gun mounted for AA work and concealed within a garden shed. See also previous articles on modelling items for Sealion.



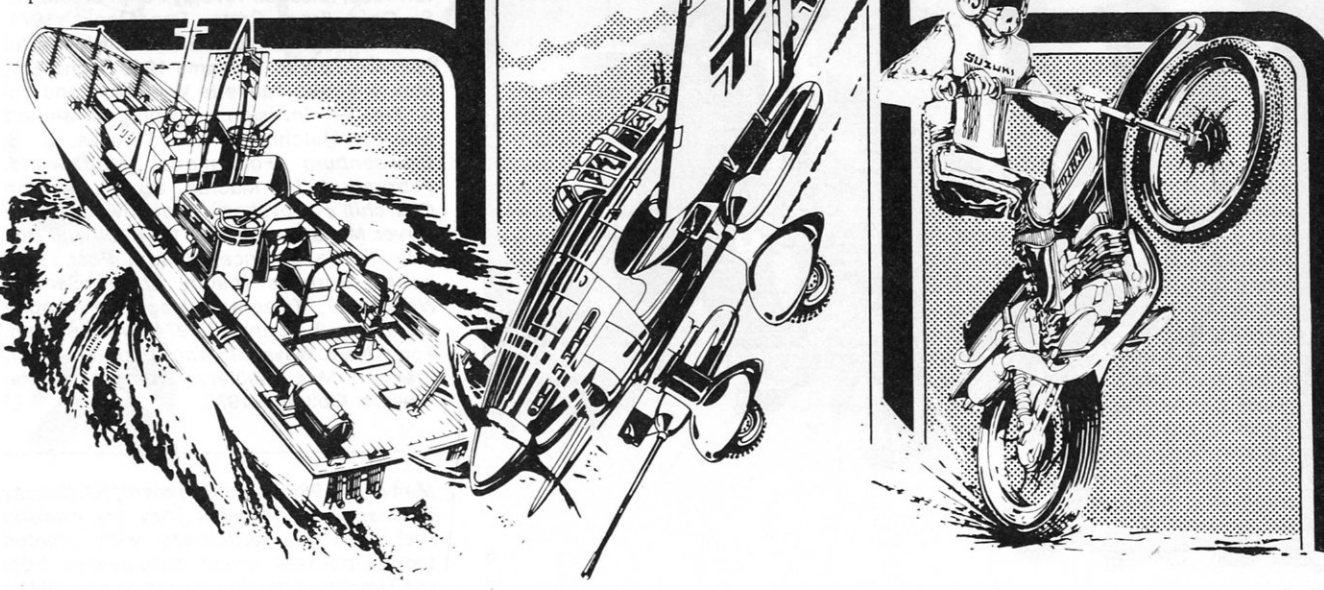
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Continued from page 528

with a shotgun (effective range 200 yards maximum in July), the remaining third having to pick up weapons on the field. Ammunition was very limited, only five rounds per rifle. Again, some ideal situations occur here for 'skirmish' games.

Intelligence The German commander should work with the information on British strengths and dispositions believed accurate at the time. The British were credited with at least three more divisions than they actually had and half the existing divisions were wrongly believed to be fully operational. Dispositions were also wrong: see early articles and maps for full details. On the British side, in early July the invasion was expected on the east coast and at this precise period the Admiralty had reported that the Germans could be expected to slip through the inadequate reconnaissance screen undetected: up to 12,000 of the enemy — with some AFVs — between the Wash and Dover, and perhaps 5,000 men somewhere between Dover and Land's End. In fact the full first wave of 90,000 men and 4,000 horses may well have reached the English coast at dawn without any opposition, plus another 15,000 airborne troops, for the RN's battleships were in the north and the destroyer flotilla at Dover had been moved to Portsmouth because of air attacks. If the invasion fleet sets sail at dusk throw one dice every wargame hour: score 6 and fleet is discovered. It takes another hour for the news to reach the British C-in-C and a further hour before any reaction takes place.

Morale It should be borne in mind that in July 1940 the Wehrmacht was highly trained, experienced (not to say triumphant), well equipped and well led. The BEF troops were not properly re-equipped or organised after their defeat, and the Home Forces were mostly untrained, poorly equipped and doubtful about the higher commanders and politicians, who they felt had let them down. But the British were fighting for their homes on their own land, whilst the German troops were out of their element (many had never seen the sea) in a sea-borne invasion and could not be sure of full backing once ashore. These factors should be reflected in the basic morale values and in the plus and minus system to allow for variations to morale in battle.

Camouflaged pill-box 'somewhere in Southern England', 1940.

Mustard Gas The British planned to use this against any successful beachhead but as at this date both sides were fully prepared for chemical warfare it may not have been too effective. Casualties (wounded) would have been caused, but the main effect would probably have been delay and interference with working and fighting abilities — important in the first hours of the landings.

Obstacles Dragons' teeth and asparagus beds may be cleared by HE fire, say an area one inch deep by two inches wide for each hit; or by engineers exploding charges, two moves to lay, one to explode, clears an area two inches wide by three inches deep.

Petrol weapons Petrol bomb and blanket: score 6, 5 or 4 for success against any vehicle. Molotov: score 6, 5 or 4 against soft skins, 6 against AFVs. Fougas: 3, 4, 5 or 6 to fire at correct moment. Static flame trap: score 3, 4, 5 or 6 to set petrol

flowing at correct moment, 2, 3, 4, 5 or 6 to ignite it. Home-made grenades and mortars: score 3, 4, 5 or 6 to explode. Sticky bomb: limited supply but very effective against AFVs, maximum effective range 20 yards. However, test morale of attacker to see if he will get close enough to the AFV.

Supply The simplest method of supply is to take a model symbol; a barrel, box, sack etc; and name it one ration for a company for a day; one hour's shells for one tank; one hour's shells for one gun; one hour's petrol for one lorry, etc. Resupply is then by physically moving these various symbols in vehicles (as many as they will hold) to the required areas. Remember that AFVs sometimes 'bombed up' during the course of a battle, either by pulling out to the rear or by lorries coming into the front line and risking a hit. The average barge could carry 750 gallons of petrol, a Rhine barge had a capacity of 1,300 tons, canal barges 500-600 tons. British coastal batteries and field artillery had ammunition for only one day's hard fighting.

Tactics Had the invasion come in July, Ironside's plan would have been in operation — a small mobile reserve of infantry and anti-tank guns and the main force of armour north of London; very few troops round the south and east coasts, with a series of stop line defences further back. Defence was to be in depth, stopping at the GHQ Line (not then completed). Field artillery was static, covering likely landing places. When the German assault wave landed the British defenders would have been heavily outnumbered, perhaps by as much as five to one, and would have fallen back quickly — they were there to delay, not to prevent a landing. These tactics must be adhered to, even though with hindsight they may spell the doom of England, for these were the standing orders in July 1940. Of course, as the battle develops, so the forces available may be realigned, but this of course has its own built-in disadvantages.

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Men of the 98th Field Regiment, RA (Surrey Yeomanry) at practice. They are wearing the pre-1940 battledress with pleated blouse pockets which disappeared from the simplified version issued in mid-1940.



Royal Marines Corporal 1865

Light Infantry figure converted from the Airfix Coldstream Guardsman by C. I. Davies

THE ORIGINAL IDEA for this figure came from a print I obtained whilst serving in the Royal Marines. It depicts a Corporal in the Royal Marines Light Infantry about 1865, in full dress uniform and equipment. The Corps had been redesignated a 'Light Corps' some ten years earlier in 1855, and accordingly the RMLI and Royal Marines Artillery constituted the Royal Marines Forces right up until 1923. What appealed mostly about the print was that there was no need to alter in any way the basic 'at ease' position of the figure, which leaves simply the equipment to alter.

Starting with the legs, trim off the gaiters until the shape of the boot underneath is obtained. Next, trim off the trousers to a height of 7 mm from the base of the boot. Fairly thick plastic card is to be used for the anklets, so file down the gap well. To form the anklets card 4 mm wide is used, simply wrapping it around the space left by filing (Fig 1). No straps are needed as the anklets are of the lace-up type. The legs may now be cemented together.

After cementing the body halves together the lace detail is cut away and the cross straps partially filed down. These are left to give added depth to the card straps to be added later, although they are filed away completely at the shoulders, so that the epaulettes do not look too bulky. The centre line of piping is left, and every other button is filed away. I find that silver paint applied thickly to the buttons tends to give them greater depth. The lower line of piping on the collar is also cut away, as are

the coat tails (Fig 2).

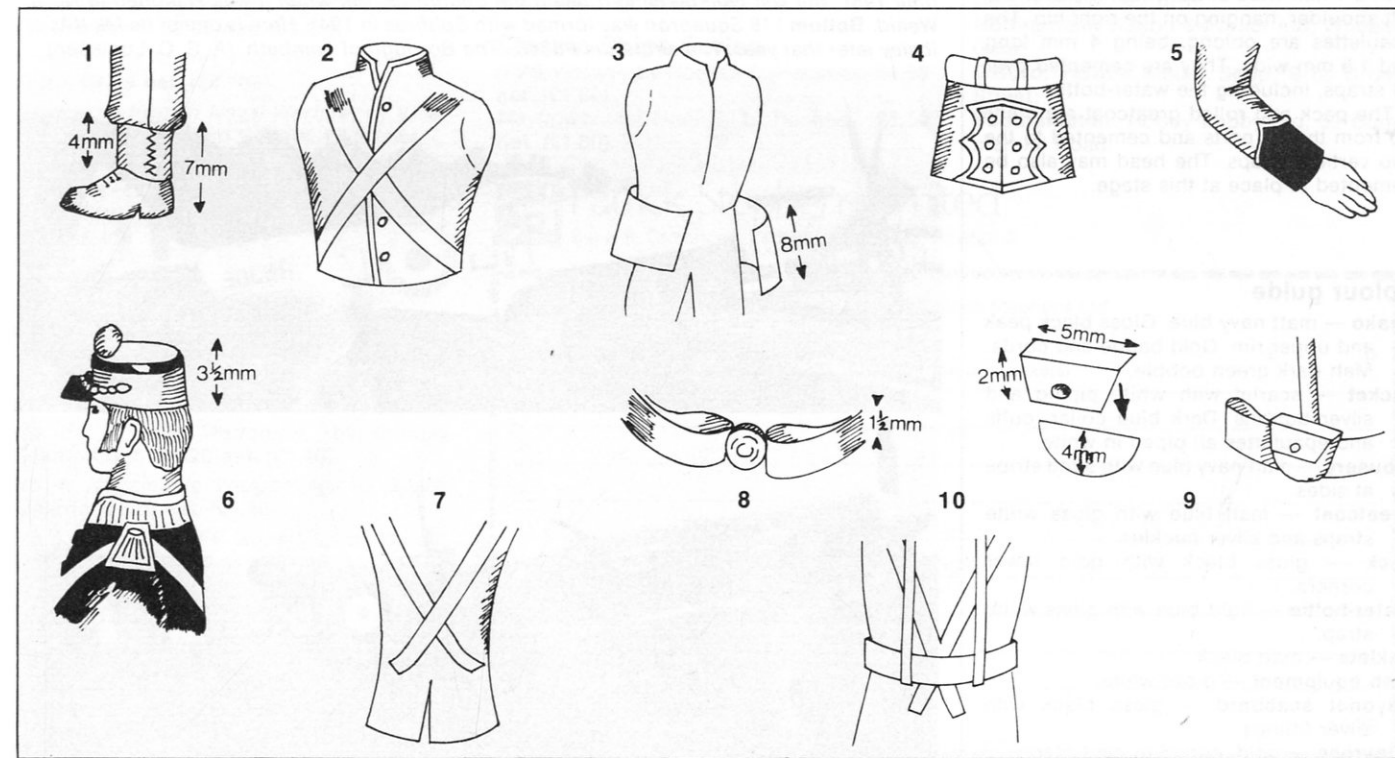
The jacket is now cemented to the legs, and the bottom part of the jacket is made up from plastic card 8 mm wide and of sufficient length to fit around the hips of the figure (Fig 3). It is cemented at the waist using the minimum amount of cement. Do not worry if the join at the waist looks rather scruffy, as this will be covered by the waist belt. The rear of the jacket has a single vent and the white piping detail is simply painted on, the six buttons being made from small pieces of sprue. Alternatively the buttons can be built up using the silver paint (Fig 4).

The straight arms from the kit are used, with all the cuff detail filed away. As the uniform is that of a Royal Regiment, the cuffs should be pointed, being blue with white piping. I painted this on rather than construct new cuffs as they were, in fact, flush with the jacket (Fig 5). I found it easier to paint the insides of the sleeves before cementing to the body. When dry, the sleeves are cemented to the body and the join filed flat and filled if necessary. The jacket and sleeves should now be painted, having regard to the colour guide.

The head is used straight from the kit, Royal Marines at this time being allowed to wear sideburns. As the figure is meant to be on a parade ground he should be clean-shaven. The shako peak is removed and a new one made from thin plastic card. The new peak is horizontal and cut square in front. The top of the shako is then cut down until the front is lower than the rear,



the front being 3 mm tall and the rear being 3.5 mm tall (Fig 6). It will be noticed that the centre of the shako is hollow and that a hole will gradually appear as it is cut down. This must be filled using any of the filler mediums, and then filed flat and smooth. For the front badge I used the one from the kit. The cords also come from the kit, with the tassels cut off. They are worn horizontally and lay along the peak. To finish off the shako, a round bobble is needed. I made one from a piece of sprue but any small spherical bead could be used. That completes the head, but do not cement it in place until the webbing equipment is com-



Modelling the Ram



Last instalment in this series from Joe Sauve

MODELLING THE RAM tank in 1:76 scale is as much an exercise in sculpture as it is in construction. The hull shape is complex and, as with most cast hulls, flows easily from one angle to another. This is very difficult to represent on a line drawing. For that reason I have attempted to include more photos than would normally be required (see also Parts 1 and 2 photos in the previous two issues).

Two different construction methods may be used. Either the 'build-up-and-sand-down method', or the 'Vacu-form' method can yield good results. I used the former method for the vehicle depicted in the model photos in this article. I have also carved a wooden mould for vacu-forming additional hulls for some future construction of turretless variants of the Ram. In these a hollow interior is necessary. I will deal only with the build-up-and-sand-down method for this conversion.

Start with a basic Airfix kit of the Lee/Grant, a sheet of 40 thou plastic card (or 30 thou but I prefer the added strength of 40) and of course a standby spares box for goodies. One note here, read *everything* before starting construction. Get the feel of the model then build it.

Chassis assembly

(refer to drawing E)

Cut the top piece of the final drive housing (Part 50) just above the bolt line to produce a drive cover without the hull front

Ram IIa or B preserved at the Canadian War Museum, Ottawa. Note hull and turret shapes.



plates attached.

Cut the driver's hatch from the scrapped frontal plate to use later.

Cut the sponson floor plates off the chassis sides (Parts 21 and 4).

Assemble the chassis without suspension (use only Parts 21, 4, 50, 59 and 55). Set this aside.

Hull construction phase 1

(refer to drawings A and B)

Cut a base plate in heavy plastic sheet to conform to the basic hull shape viewed from above (1).

Cut an upper hull plate to conform to the shape of the top level of the hull when viewed from above (shaded portion of top view) (2).

Cut bulkhead type spacers to conform to a cross-section shape of the hull at the positions noted on the drawings by arrows (H).

You now have the pieces required to assemble a basic hull framework. Assemble these as per the diagram and set aside to dry. Don't rush this, give these pieces at least 24 hours. After all construction is finished they will be enclosed and not able to get rid of solvents. Note: drawings show hull shapes only — not surface details.

Turret construction phase 1

(refer to drawings A, C and D)

As in the procedure noted above, cut a base plate in heavy plastic sheet (3), then cut a turret top plate in heavy plastic sheet (4).

Cut spacer pieces at the points of the drawing noted as (T). Cut turret side pieces for the flat segments shown on the drawing. Assemble this framework and set aside as in the hull construction.

Suspension

Now that you have a hull framework and turret framework and since it's still early in the day (you did start this on a Saturday morning, didn't you?!), we can proceed with the selection of a suspension. You can use the suspension from the Lee/Grant or the later Sherman type suspension with the trailing return rollers (you'll notice I used the first). Almost all of the Ram types were equipped with both types of suspension at one time or another. In the later years of the war many training vehicles were given the

Ram IIe, Lord Strathcona's Horse, in England April 20 1943. This is probably the vehicle shown in Profile No 13 colour plates. Note some minor detail differences (Public Archives, Canada).

early suspension and had their Sherman suspensions transferred to combat vehicles. This is why photos show early Ram II hulls with Sherman suspensions used as Kangaroos or Wallabies.

When you've made your choice assemble the suspension units as per kit instructions. Remember, if you selected Sherman suspension the locating pins won't fit, so chop them off.

Rest for the remainder of the day! If you're fanatical about this hobby this is a good time to work on the tools and accessories you will need. Here's your list: one Carbon Tetrachloride fire extinguisher, brass coloured or vehicle colour; two pick handles and pick heads (Armtec's tool set saves a lot of time); two shovels; one camouflage net roll (15 x 35 feet actual); one canvas roll (I use single layers of tissue painted and rolled) (18 x 24 feet actual); one .30 Cal MG barrel (use the kit piece if you want); one axe, one starter crank and one crowbar.

Hull construction phase 2

Plaster the hull frame with body putty, Green Stuff, Blue Stuff or whatever your colour preference or stock of supplies dictates. The idea is to build up to the correct shape and size using successive layers of putty.

Each layer should be allowed to dry and then be sanded smooth, though minor pitting is desirable as this duplicates the actual cast results. I find that Testor's body putty gives a nice casting effect but Green Stuff is better for heavy build-up-work.

You can now appreciate why it is necessary to build your framework just under the actual vehicle dimensions. This allows for the covering of the putty layer.

Sand edges smooth and ensure that the shape flows overall. There are no sharp angles on the hull. When this is done to your satisfaction, install the driver's vision port. Thin down the kit piece so that it lays as though recessed in the hull. Add the sponson doors if you are building the earlier Ram II versions. I like them better so my model has doors. Use the commander's

Author's model of a Ram II showing a training marking scheme, with red/white/red flash on hull sides.

Turret construction phase 2

Use the same process as above to complete the turret shape. Add the ventilator, turret hatch, periscopes and aerial mounts to the basic turret, the gun removal plate to the rear of the turret, and construct the gun mantlet according to the drawing. Install the 6 pdr gun (please drill the bore, it bothers me when people forget). Attach the face plate to the turret and your turret construction is complete.

Painting and markings

I prefer painting before final assembly because the chassis is easier to work with. Depending on the period depicted by your model, basic colour should be SCC No 2 (Brown) from 1942 to February 1944 and Olive Drab after that time for some vehicles. The Profile has a good set of markings on its colour centre spread if you can get a copy. If you wish to use another scheme these notes will help.

A gold maple leaf 5 inches high by 4 inches at widest point should be superimposed on the formation sign, a 6½ x 9 inch rectangle in dark green for 4 Cdn Armoured Division and maroon for 5 CAD. The formation sign is located on the left horn or front left side of the final drive cover.

The unit sign for these divisions is a 9½ x 8½ inch rectangle in unit colour with the unit serial superimposed in white. This sign is located on the right horn or front right side of the final drive cover. See Table for sample combinations.

Standard squadron markings were used on turret sides and rear along with the red/white/red recognition flash on sides, front and rear. Due to the extreme variations in markings used, it is best to pick a specific photo for reference. Except during major exercises, markings varied even within the same squadron.

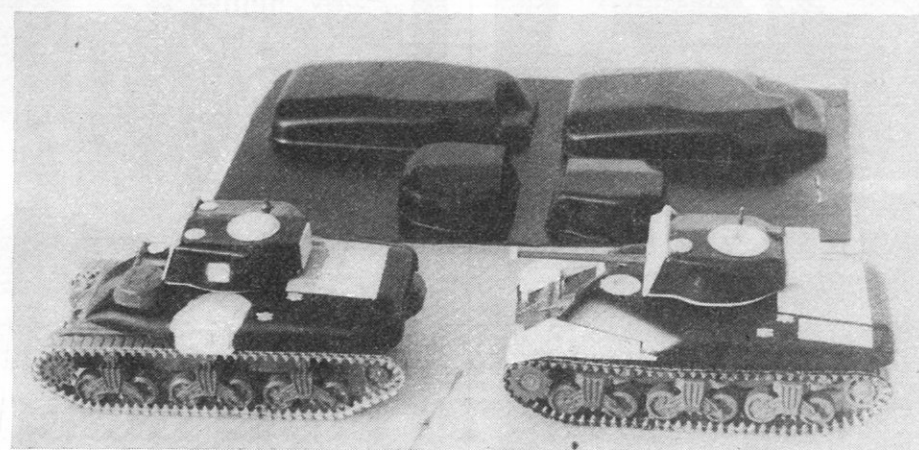
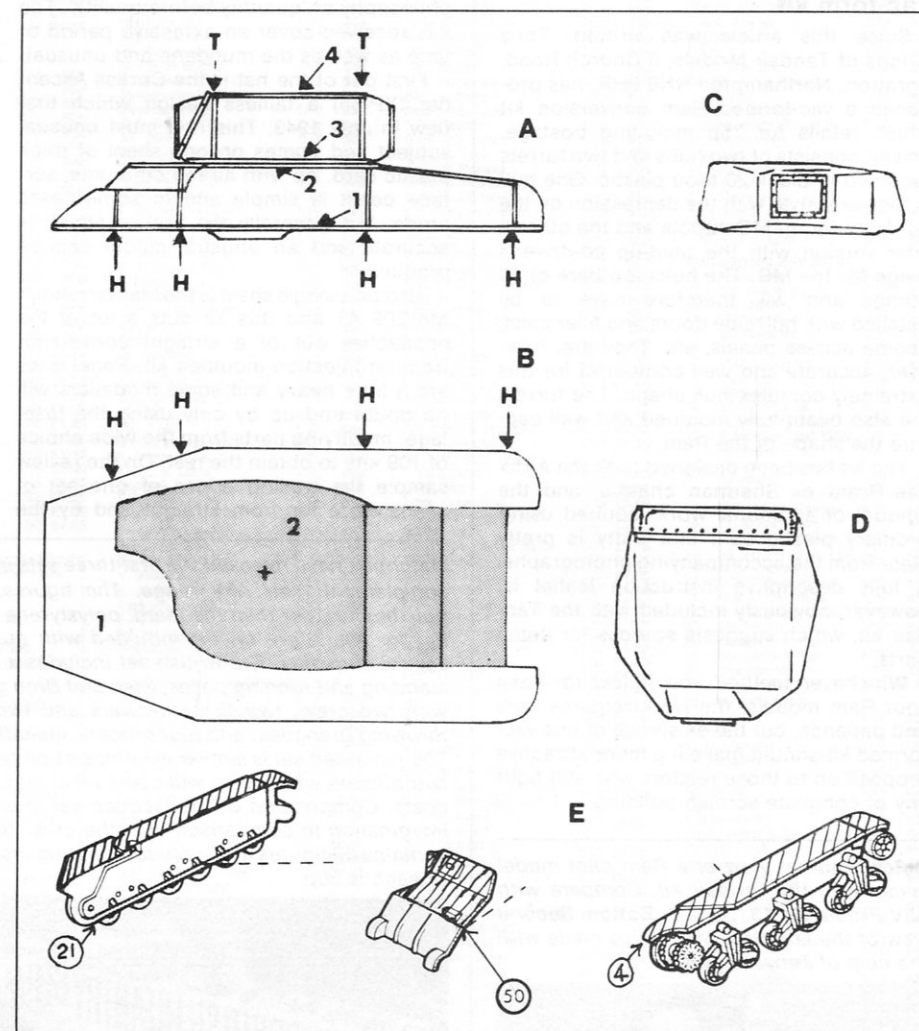
Suggested references

AFV Profile 13 and Bellona Military Vehicle Prints 14 (excellent 1:76 scale drawings with only minor detail errors).

Useful measurements

Mk V 6 pdr gun-exposed portion of barrel 70 inches, diameter 3¾ inches (5 inches at base). RAM II faceplate width 56 inches. Sponson door height 19 inches. Commander's hatch inner diameter 29 inches. Commander's hatch outer diameter or rim 34 inches. Horn width 21½ inches. Horn stowage box cover 32 inches long, 12 inches wide, 10 inches deep.

Ram models from the Tandair vac-form kit mentioned on the next page. In the background is the actual vac-form moulded sheet with, left, a prototype Ram model and right, a late Mk II. Plastic card and body putty additions are clearly evident in both cases.





Another view of the author's entirely scratch-built model on the Airfix Lee/Grant chassis.

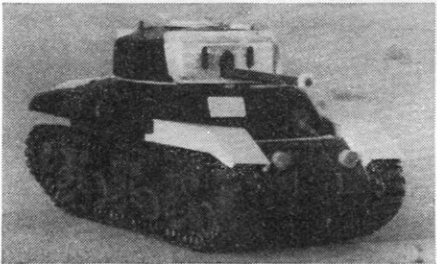
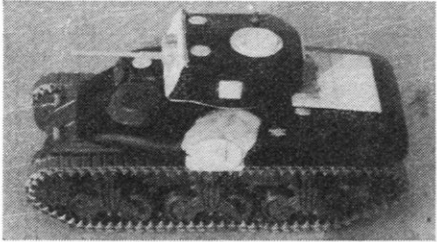
Vac-form kit

Since this article was written, Tony Griggs of Tandair Models, 6 Church Road, Spratton, Northampton NN6 8HR, has produced a vac-formed Ram conversion kit which retails for 75p including postage. The kit consists of two hulls and two turrets moulded in black 20 thou plastic. One hull is the early style with the depression on the left front for an MG cupola and the other a later version with the built-up co-driver's bulge for the MG. The hulls are bare of all fittings and will therefore have to be detailed with hull side doors and filler caps, engine access panels, etc. They are, however, accurate and well contoured for this extremely complex hull shape. The turrets are also beautifully moulded and well capture the shape of the Ram.

The kit has been designed to fit the Airfix Lee/Grant or Sherman chassis, and the amount of additional work required using ordinary plastic card and putty is pretty clear from the accompanying photographs. A fully descriptive instruction leaflet is, however, obviously included with the Tandair kit, which suggests sources for detail parts.

Whichever method you follow to make your Ram models, the work requires care and patience, but the existence of this vac-formed kit should make it a more attractive proposition to those readers who still fight shy of complete scratch-building.

Below Another view of a Ram pilot model made from the Tandair kit. Compare with AFV Profile No 13, page 6. Bottom Second view of the late Ram Mk II, also made with the help of Tony Griggs' kit.



NEW KITS AND MODELS

Airmodel quintet

AIRMODEL HAVE established a reputation of never doing anything by half measures, and their latest five releases to reach us indicate that they have no intention of losing this or sacrificing their apparent philosophy of 'quantity before quality'. The kits received cover an extensive period of time as well as the mundane and unusual.

First out of the hat is the Curtiss Ascender (XP-55) a tailless design which first flew in July 1943. This is a most unusual subject and comes on one sheet of thick plastic card. As with all the other kits, surface detail is simple and in some cases crude, but generally the outline shape is accurate and an unusual model can be produced.

Also on a single sheet is the Messerschmitt Me 209 A1 and this kit cuts a lot of the headaches out of a straight conversion from an injection-moulded kit. Panel lines are a little heavy and some modellers will no doubt end up by only using the fuselage; modifying parts from the wide choice of 109 kits to obtain the rest. On the review sample the trailing edges of one set of wings were far from straight and by the

time this moulding error had been put right, the chord was totally inaccurate.

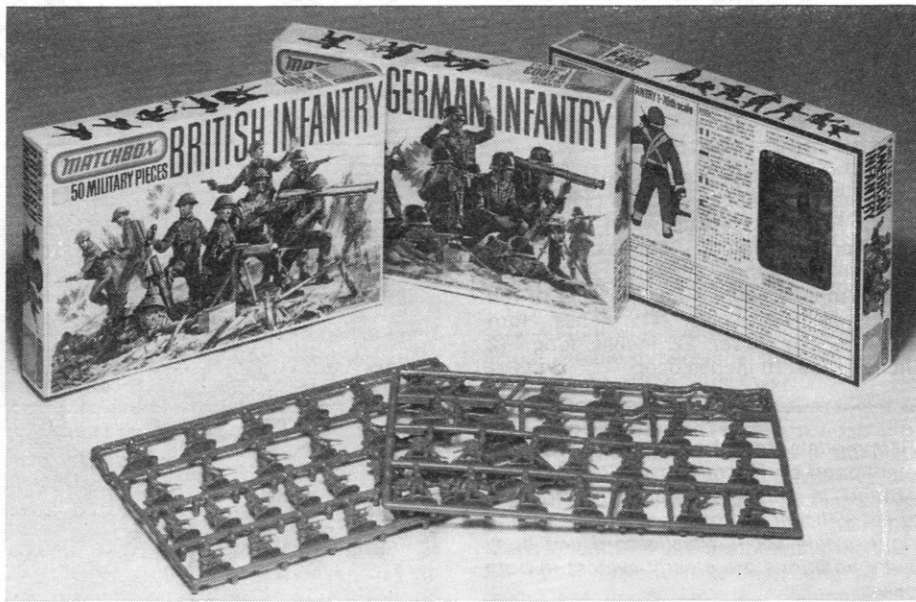
Still in the World War 2 period comes the largest of the five in the form of the enormous Blohm & Voss Bv 238V1. This large flying boat makes up into a truly impressive model but the work involved should not be undertaken lightly or by those who have not previously tried a vac-form kit.

The five sheets of thick plastic card present a daunting task as far as cutting out and sanding are concerned, the latter being particularly troublesome as the finding of a flat enough area on which to sand the wings is second only to finding an area large enough in which to display the completed model. The instruction sheet, or rather four sheets, detail very precisely exactly what is needed at each stage and care must be taken in following the instructions to the letter. A supply of balsa wood is also needed for the manufacture of internal spars and support, so all in all there is one helluva lot of work and many who start out will fall by the wayside.

A return to reality is brought about by the

Continued on page 538

Matchbox have released the first three sets in a new series of 1:76 scale figures designed to complement their AFV range. The figures, which are unfortunately moulded in 'soft' polythene rather than the 'hard' polystyrene modellers and wargamers have been requesting for years, are crisply moulded with quite fine detail, but suffer from a rather 'flat', bas-relief quality. The British set includes a number of men armed with rifles in kneeling, standing and running poses; Sten and Bren gunners; two Vickers machine-gunners; mortar with two crew; two flamethrowers and two bazookas; walkie-talkie operator; four men throwing grenades; and four officers, including two who will make ideal tank commanders. The American set is similar in composition but includes a very nice .50 cal machine-gunner, two officers who, again will make ideal tank commanders, and two other officers in great coats. Composition of the German set is similar again but somehow the mouldings lack imagination in comparison with the other two, while the MG42 (?) is very poor. Each box contains 50 figures and includes painting instructions, which are very welcome. Retail price of each is 30p.

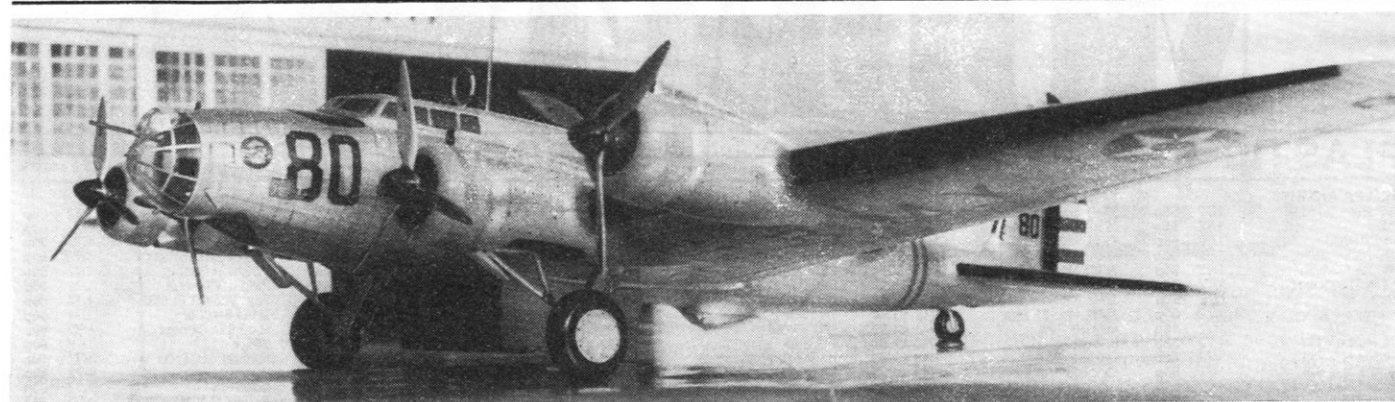


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Continued from page 536

kit of the Sikorsky CH-37 Mojave helicopter, the basic parts of which are moulded on to one sheet. The assembly drawing indicates the parts that have to be scratch-built and these include all the rotors, the rotor head assembly and the interior, no mean task if an acceptable model is to result.

The last of the quintet is the Bristol Brigand, a much sought-after subject by RAF aircraft enthusiasts and featured in *Airfix Magazine Annual* No 3. This is the most conventional aircraft in this latest flood from Airmodel and should satisfy those who cannot wait until an injection-moulded kit is produced — as it surely must one day.

Once again the major components are on one sheet and comments made about detail on the other kits equally apply to the Brigand. Location of the wings to the fuselage would be greatly improved by some form of moulded tongue, and the engine nacelles do look a bit thin as far as overall diameter is concerned. Although the basic parts are included there is a tremendous amount of work involved in producing the undercarriage, engines, propellers, interior detail, not to mention improvement of the surface detailing if this model is to be of sufficiently high standard to stand comparison alongside contemporary injection moulded kits.

Overall one must be impressed by the

industry of this German manufacturer, and his choice of subjects, but we have commented before and make no apologies for doing so again, that in many respects he would be much better off if he slowed down, took a long look at his techniques and concentrated all the energy involved in producing five indifferent kits, in making one superlative one. In the long run this will benefit not only Airmodel but the many frustrated modellers who might finish a model and be unhappy with the result, or get half way through and decide the effort is just not worth it. Either way, they will probably decide not to bother again so sales will drop. A little more attention in every department, including the instruction sheets in which — the Brigand aside — the drawings are very crude will pay dividends. Having said that a bouquet must be given for the sheer industry of the company which must make the shares of plastic card manufacturers who supply the raw material well worth obtaining!

Boeing YB-17

FOLLOWING CLOSE on the heels of their highly acclaimed Super Constellation, Rareplanes have now added another large kit to their range of high-class vac-form models, the Boeing YB-17 in 1:72 scale.

There can be little doubt that this company is the leader in the field of vac-form kits; in fact it is so far out in front that it must almost be lapping the many back

The superb moulding quality of the Rareplanes YB-17 is clearly evident here.

markers who have tried with varying degrees of success to get into this specialised market.

With the Monogram 1:48 scale B17G now established in the shops, a promised B17E from Frog, plus the existing kits of this fine aeroplane, the Rareplanes kit could almost turn 1976 into 'The year of the Fortress'.

Bristling with guns in blister-type turrets, a high gloss aluminium panelled finish, plus the colourful markings of the USAAF, the YB-17 must be one of the most attractive versions of this popular subject, and Rareplanes now bring it into reach of every modeller who has some degree of skill.

Moulded in heavyweight high-gloss white styrene, the Rareplanes kit is a fine example of just what can be done if the correct techniques are employed, research is carried out diligently, and production is not rushed.

Construction follows the usual form for this type of kit, involving much labour to remove the parts from their sheets then sanding away surplus sheet with wet and dry, this can be an onerous task if you let it, but the joy of seeing the model take shape more than offsets the effort needed.

Surface detail is extremely fine, especially on the wings, and many of the present producers of injection moulded kits could learn a lot by taking time off to study a Rareplanes kit.

Some modellers will no doubt discard the propellers, undercarriage legs and engines, but all these components are present and can be used if you feel so inclined.

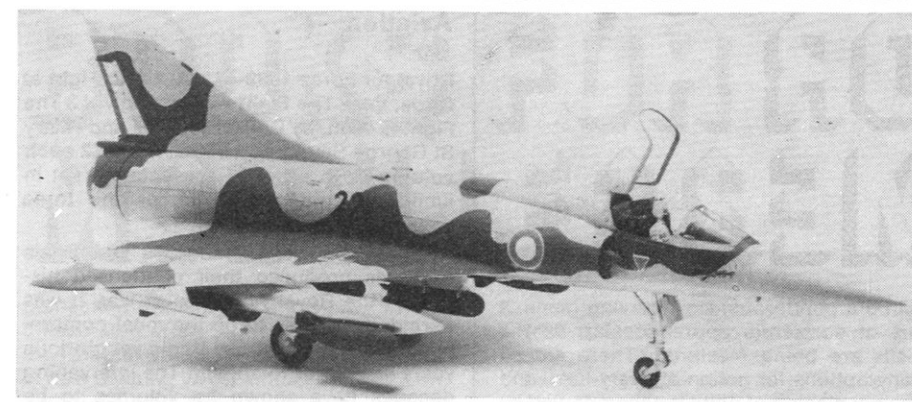
The separate package of transparencies, contained on two sheets, reflect the high standards of the rest of the kit and are equally as well detailed. The large instruction sheet takes the modeller through easy stages to completion and includes details of markings for US Army aircraft.

As a bonus each kit contains a separate 30-part conversion to make the complete fuselage and tailplanes for a B-17D (RAF Fortress 1) using the Revell B17E wings, thus enabling another version of the Fortress to be added to collections of World War 2 bombers.

At £4.50 the kit represents first-class value, and it is understood that production will be limited to 1,000 kits, so if you hanker after a full set of Fortresses get your order off straight away, as it might be a long time before another chance presents itself.

Revell Mirage 5J/5F

FOLLOWING IN the footsteps of the Phantom,



Revell's up-dated Mirage 5F in 1:32 scale in the French markings provided with the kit.

and in fact released at the same time, the latest up-dated Mirage from Revell is sure to be a winner.

There is a cleanliness of line combined with a lethal look that makes this French aeroplane attractive in whatever scale it is modelled, and those devotees of 1:32 will not be disappointed with this Mirage.

The model measures out accurately and comes with a complete selection of weaponry and underside stores. Moulded in a chocolate brown colour, the component parts have nicely executed surface detail, fit well, and on our review sample were bereft of any flash.

Unfortunately the wheel wells are not detailed which is really an essential part of a model in this size, but it does leave the keen modeller something to do in the way of research and scratch-building. Cockpit detail is first-class with an excellent instrument panel on the decal sheet, which is really the only component that must come in for major comment. Revell have unfortunately supplied the Israeli Star of David insignia in black, where as it should be blue. There cannot really be any excuse for this mistake and those responsible should now be spending time at the Wailing Wall!

Overall this is a striking model of an attractive subject and makes an ideal companion for the earlier Revell 111E/R to which it probably owes its existence.

Latest and best in the Dinky range of die-cast AFVs is this Leopard anti-aircraft tank in 1:50 scale. The model, which is a fairly accurate representation of the real thing apart from the gun muzzles, features working road-wheels and tracks, revolving turret with elevating guns and traversing radar aerials, while the guns, of course, fire plastic shells. It is finished in green with German army decals, and costs £2.85.



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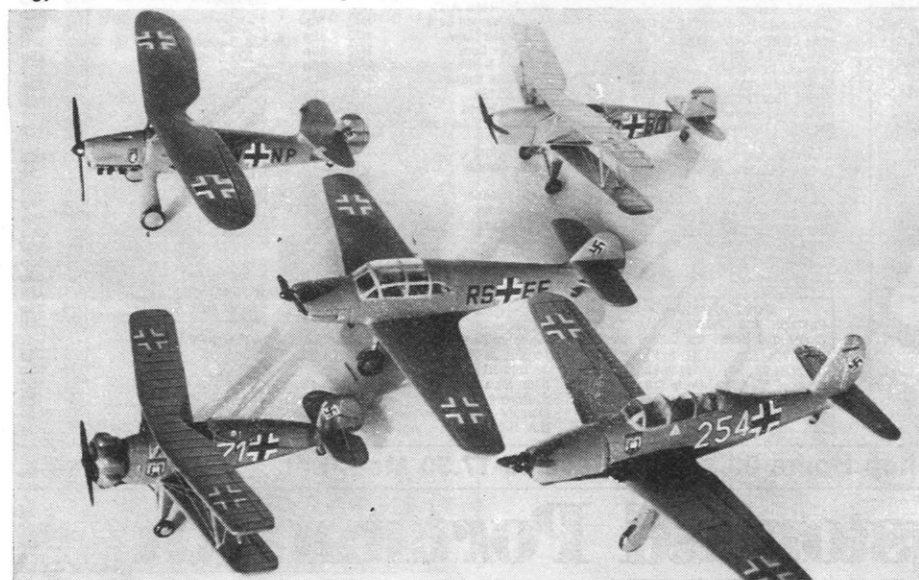
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Other recent Airmodel releases. Back left, Fw 56; back right, Bu 131; centre, Bf 108; front left, Bu 133; front right, Ar 96, all to 1:72 scale. All models in this range are available from Argyle Models, to whom we are grateful for review samples.



NEWS FOR WARGAMERS

Sorcerer

LOVERS OF fantasy can be expected to have colourful imaginations. If so, they may indulge themselves to the full with this new game from Simulations Publications Inc.

Sorcerers exert their power over dragons, trolls and demonic infantry in a mythical land where the human inhabitants have the misfortune to be embroiled in a sort of perpetual border dispute at the conflux of a number of magical worlds.

The playing board is a vivid display of intermingling, multi-coloured hexes representing the overlapping magical worlds. The sorcerers of the game are masters of certain of these colours of magic, their power being enhanced or weakened in hexes of different colours. They can create whirling vortexes which rampage through the land at random, multiplying and destroying indiscriminately; they can hurl magic bolts and conjure up terrible magical beings to further their ambitions and confound their enemies; they can move from point to point in an instant and can cast a cloak of invisibility about their followers.

Because, given the right conditions, a sorcerer can conjure up reinforcements at whim, hurl magic bolts from afar and teleport himself from one side of the country to the other in a flash, he is a powerful figure, but one whose power is, in a way, dependent on the imagination and ability of the player. He needs forethought, an instinct for his opponent's intentions and a quick appreciation of rapidly changing conditions.

While the rules are being learnt, Sorcerer

will be a ponderous, slow-moving game, a sort of sorcerer's apprenticeship as the spells are being mastered. There are so many options for action at every turn, and the very placing of units is accompanied by a myriad doubts with no latitude for wrong moves. For example, the strength and abilities of units are dependent on the colour of hex they are in and the colours of enemy units likely to attack. A unit which has special strength by virtue of being in a hex of a particular colour will find itself penalised by extra vulnerability to attrition, which is a random phenomenon.

It is a game of critical decisions from beginning to end. As experience is gained and the instincts become surer, play should become faster, more fantastic and more furious. It seems a pity that a lot of experience will be needed before the most can be got from Sorcerer. The feeling is that it might have been better if a form had been devised making it possible for the game to provide a bit of amusing nonsense now and then without too much learning being called for. In its present form it is almost a serious business. Perhaps some people take their fantasy seriously.

There are some nice touches here and there, like the independently acting Black Sorcerer for the player who just wants to stir it with everybody, and of course the possibilities for writing fantasy scenarios to play out are boundless! It is to be hoped that Sorcerer will provide the inspiration for other fantasy games in the future. It is available, price £5.45, from Simulations Publications UK, Freepost, Crown Passages, Hale, Altrincham, Cheshire WA14 6BR.

Aviation

Royal Air Force 1939-45, Vol 1 **The Fight at Odds**, Vol 2 **The Fight Avails**, and Vol 3 **The Fight is Won**, by Denis Richards and Hilary St George Saunders. HMSO. Price £2 each volume or in a boxed presentation set in limited quantity price £5 for the three volumes.

WHEN HILARY St G. Saunders and Denis Richards produced their condensed history of the Royal Air Force at war, it was heralded as likely to be the most comprehensive history of those tragic yet glorious years likely ever to appear. The intervening decades have shown no volumes to be comparable in scope and indeed authenticity to these three.

Hilary Saunders did not live to see his milestone in RAF history appear on the bookshelf. This was particularly sad since, during the war he and his companion had been responsible for some of the booklets that emerged on that magic day, Thursday, when official releases on new types of aircraft, on historical events and all that excited the imagination were brought forth. From the pens of the authors of *Bomber Command* and *Coastal Command* what better to come than the only official history of the RAF at war to cover the subject in its entirety.

These volumes began to appear in 1954. At the time it seemed that the war was long passed. Yet they gave an insight in depth into many events until then secret, and made absorbing reading. It says much for them that, on re-reading, they still jog the mind vividly about happenings often sad, many times famous, sometimes humorous and always interesting.

Volume 1 traces the course of the build-up to hostilities and relates the events of the 'phony' war. The Norwegian involvement begins a sorry chapter of events which culminated in the fall of France. Then comes the glory of the Battle of Britain. Many words have been written about that campaign yet none eclipse this, coming from the hand of he who wrote that slender volume which revealed to the British public what had been at stake and what was won during the dark days of the war. Little wonder that, close to the scene, he was able to produce a concise and masterly account. Very little has still been written about the blitz and in this volume will be found the best narrative yet to appear. Volume 1 is rounded off with accounts of the opening rounds in the Middle East war, the war at sea, and that ignominious day when the German Navy sailed unmolested until the last moment through that most English of waters, the Channel. By then the RAF was on the offensive.

Catastrophe was far from over, for when Volume 2 opens it traces the sorrowful campaign in the Far East. Coastal Command is seen continuing its ever important struggle, then one reads of how Bomber Command at last really gets into its stride. Completing the desert war the narrative then takes the Royal Air Force into its support role during the invasion of Sicily and to the fall of Italy.

The build-up in intensity of the Royal Air Force's contribution to victory opens the third volume. Coastal Command's major role in the Atlantic war is related, then



BOOKS FOR MODELLERS

comes the tremendous effort prior to, and immediately after, D-Day. It was when reading Chapter VII that the public first learned of how a young WAAF officer spotted a tiny aeroplane on a ramp at Peenemunde and gave the first proven warning of the flying-bomb offensive that was to carve its uncertain horror on to the Londoner. One senses that the authors were among the first to reach an historical assessment that war in the future might well be along these lines. The V-weapons campaign could not turn the tide of the war and this final volume traces the end of the fighting in southern Europe, Bomber Command's crippling attack on the enemy's sources of energy and ends by relating the fall of Japan.

In the 20 years that have passed the welter of information that has been showered upon those who have made it their purpose to learn of the Royal Air Force's part in the war has done little to require Denis Richards to alter his factual content in any of the volumes.

This major historical work was based upon a vast store of official records, many of which have become available to the public in recent years. Any attempt at scrutiny of these immediately throws up the size of the task of writing this history, which was simply prodigious.

For all time these three volumes will stand, surviving more ephemeral efforts. Various authors have attempted to relate the stories of various factions of the Royal Air Force at war. This set of three volumes remains the only attempt to relate the entire story of the Royal Air Force 1939-1945.

The Speed Seekers, by Thomas Foxworth. Macdonald and Jane's, Paulton, House, 8 Shepherdess Walk, London N1. Price £12.

IT IS difficult to know where to start when reviewing this massive book. It tells in great detail the story of the racing aircraft of the era 1919-1926 but anyone who just picks up the book for a browse will have difficulty in establishing this fact. The book contains 560 pages printed on high quality paper of which 140 are detailed appendices. There are numerous photographs and three-view scale drawings of many of the aircraft mentioned in the text, and colour on the fly-leaves. Overall, the standard of production is very high. The text is written in a readable but rather colourful style (French Freaks and other Fastbacks!) and very few details seem to have been omitted.

At first one is puzzled why the period 1919-1926 has been chosen but in that short time aircraft speeds were doubled and aeronautical engineering was advanced considerably, almost to the limit of what the propeller-driven aircraft could achieve. Seen in these confines the book is superb. It deals not only with the American air racing scene but also with the French,

British and Italian efforts and although American-biased for an obvious American market, it is more than fair and just to the considerable achievements in France and the UK. Overall the book is a joy to own and read and it will have a position of prominence on this reviewer's bookshelf. The one reservation that I have is whoever will pay out £12 to buy it?

Bombers in Service: Patrol and Transport Aircraft since 1960, by Kenneth Munson. 1975 revised edition. Blandford Press, Link House, West Street, Poole, Dorset BH15 1LL. Price £2.10.

THIS EXTENSIVELY revised and updated volume from the 14-part World Aircraft in Colour series gives specifications, short descriptions, and development histories of some 78 major aircraft types in use by air forces around the world during the period 1960 to the present. Particularly valuable to the modeller are the 20 accurate colour plates showing detailed side and split dorsal/ventral views of each aircraft in an authentic colour scheme. Amongst the aircraft described are the famous and the infamous as well as the more routine and less spectacular. The 159-page volume also looks ahead with a brief account of the Rockwell International B1 swing wing bomber not operational until the late 1970s.

Since its introduction in 1966, modellers and aircraft enthusiasts alike have proved the value of the series by buying over one million copies to date. This new volume will ensure the continuation of the tradition.

Flying at Hendon: a Pictorial Record, compiled by Clive R. Smith. Routledge and Kegan Paul, Broadway House, Carter Lane, London EC4V 5EL. Price 85p.

THE BUSTLE AND noise of the early Hendon air pageant is very much in evidence in the collection of historical photographs presented in this large format 32-page booklet. The flying history of Hendon Aerodrome is pictorially traced from its beginning in 1910 with the flight of Louis Paulhan in the Daily Mail London to Manchester air race, to the height of its popularity in the pageants of the early 1930s. The final two pages briefly bring the story up to the present with the opening of the RAF Museum on the site.

Press notices and other ephemera complement the short text adding to the atmosphere created by the well selected and reproduced illustrations. The photographs are mainly from the author's own collection and show some of the famous personalities and their machines flying in events which helped to make Hendon the flying centre of the period. Like the text, the captions to these photographs tend to be short and could occasionally have been expanded to give the reader more information.

Although the book is by no means a

complete pictorial history, the remarkable collection of photographs it contains make it well worth its modest price.

Le Bombe Della Luftwaffe. Stem Mucchi, Modena. Price 70p.

YOU'LL HAVE to get your Italian/English dictionary out for this one which is a brief illustrated profile of German bombs. Please, Stem Mucchi, include some English captions at least.

Savoia Marchetti SM 82 marsupiale, STEM-Mucchi, via Taboni 4, 41100 Modena, Italy. Price 70p.

THIS IS A monograph written in Italian and bearing a very close relationship to Profiles.

The booklet contains photographs of this Italian Tri-Motor that are of varying quality but all useful to the modeller, but the same cannot be said of the three-view colour drawing which has a far from convincing appearance and is not particularly well reproduced. If you can read Italian you will obviously gain much more advantage than those of us whose knowledge of the language ends at Gina Lollobrigida and Sophia Loren, but most of the technical data is easy to translate and the pictures — with some exceptions — can be worked out fairly easily.

The cost of this book in England is 70p which is good value if you happen to have a leaning towards Italian aircraft.

Airliners in service and Fighters in service, by Kenneth Munson. Blandford Press Ltd, 167 High Holborn, London WC1V 6PH. Price £2.10 each.

THE POPULAR Blandford colour series which covers a host of aeronautical as well as other subjects, seems to be in the process of being up-dated, so if you missed them first time around you now have a chance to put things right.

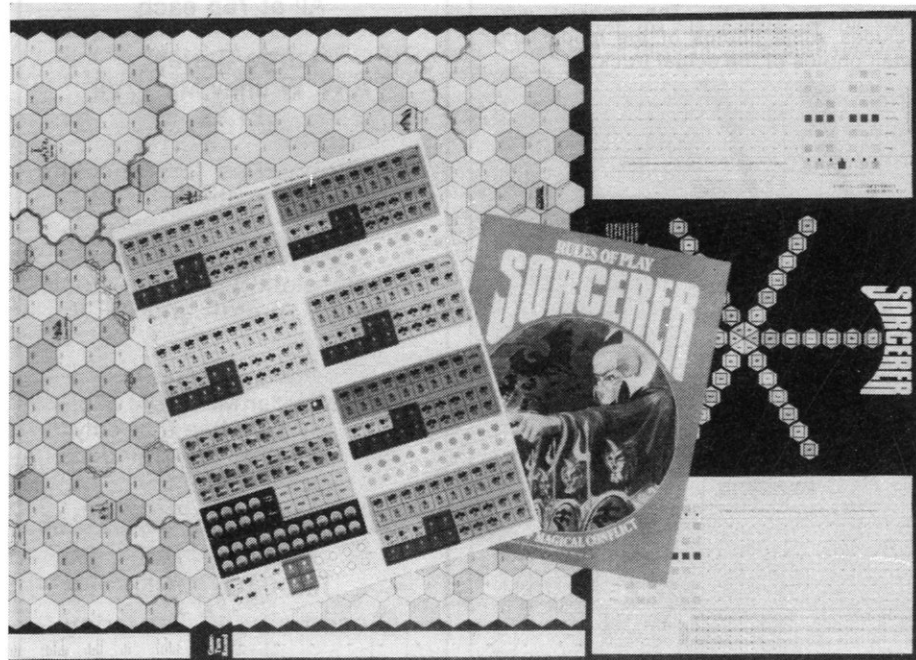
In these two re-issues author Kenneth Munson has updated his original 1966/67 works by deleting some of the older aircraft and inserting more up-to-date ones that come within the broad outlines of the titles.

The format follows the originals in that there is a short introduction to the subjects, then several colour plates, backed up by pen-pictures of the aircraft illustrated in the final section.

These are useful quick references but those whose prime interest is modelling will find the colour illustrations irritating as they show only one side view and a split plan/underside view. Nonetheless, they will sow the seeds for ideas on colour schemes and markings even if other works have to be studied to ascertain correct overall camouflage and schemes. The drawings themselves are not the best one could hope to see and the colour reproduction leaves a lot to be desired, but the books must be viewed in the correct perspective, which is a quick easy-to-read reference aimed at the general aviation enthusiast.

By modern standards the cover prices of £2.10 each are reasonable but they will make you wish you hadn't missed out first time, when the prices were about 80p!

Bf 109 Fuselage Markings 1940, by Michael Payne. Available from him at Brensham, Nunton Drive, Nunton, Salisbury. Price £1.10 post free.



THIS IS THE third and probably the last booklet in this series which describes and illustrates in black and white drawings Messerschmitt 109s shot down in the Battle of Britain. Within the third of the series there are two unusual finishes for Bf 109s. One flown by Mummert can be seen to have been plain dark green, and there is Rupp's aircraft plain grey green (02) on the sides. That mysterious red cowling band crops up again and no one seems able to explain its significance. All in all an interesting selection and a very useful selection for modellers wanting something a bit different by way of markings for 109s.

Military

Classic Tanks, Their History and How to Model Them, No 1: Crusader, by John Milsom, John Sanders and Gerald Scarborough, Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL. **Price £2.50.**

THIS IS THE first in a new series of books published in association with Airfix Products Ltd along the same lines as the popular and well-established 'Classic Aircraft' series. Each title contains a detailed development and service history of an aircraft or AFV, followed by step-by-step instructions for super-detailing the appropriate Airfix kit.

In this case, the first part of the book, by John Milsom, describes the evolution of British Cruiser tank theory through all the various types leading to the Crusader I, II, III and its various special variants. All of these are described and illustrated with numerous photographs, on top of which are two pages of Crusader data tables and a chapter on the layout and mechanics of the tank in detail, including some original wartime handbook illustrations.

Part two, by John Sanders, describes the Crusader's active service life, predominantly in the Western Desert where, despite its thin armour, a reputation for mechanical unreliability, and its underpowered 2 pdr gun, the tank's speed made it an ideal reconnaissance vehicle. The later Crusader IIL, armed with a 6 pdr gun, saw action at El Alamein and throughout the rest of the course of the campaign, including Tunisia, but by 1943 it had become outclassed and did not see further action as a gun tank. Various specialised versions were developed which did see service after D-Day, however, including two anti-aircraft vehicles and a tractor for the 17 pdr anti-tank gun, and these are also described. This section of the book includes maps, tactical diagrams and camouflage scheme drawings.

The third part of the book, by Gerald Scarborough, begins by describing how to convert the Airfix 1:32 scale kit of a Crusader III back into an earlier Mk II with 2 pdr gun or Mk I with its auxiliary turret, and how to scratch-build a fully detailed interior, including driver's compartment, fighting compartment, engine, turret basket and gun breach. The author then goes on to show how to convert the basic kit into one of the AA tank versions or a desert tank camouflaged as a lorry. Throughout, this section is lavishly illustrated with scale drawings and dozens of in-construction photographs making it easy for any modeller with a little experience and patience to follow.

At £2.50 this book is truly excellent value for money and a 'must' for all AFV enthusiasts.

Fortress. A History of Military Defence, by Ian V. Hogg. Macdonald and Jane's, Paul-ton House, 8 Shepherdess Walk, London N1. **Price £4.95.**

YET ANOTHER book from the prolific pen of Ian Hogg. He was largely responsible for the growth of interest in artillery as a separate subject and now he has turned his hand to another subject that cannot fail to have the same impact, namely fortifications.

The recent growth of interest in all things military has led to an increase of the time and chronicling of fortifications but much of the work done has been sketchy and ill-considered with well-meaning people taking items of local interest and placing them outside a fully comprehensive concept of their place in the history of such works. This book at last put the history of fortifications into a proper context and any work carried out in future can now be put into a correct framework.

Having said that, it must be said that there is little in this book that cannot be found elsewhere in greater or better detail, but its main strength is that it will introduce many into the subject of fortifications and lead them on into the greater detail by directing their efforts.

Mr Hogg has once more used his usual flair for presentation by the plentiful use of simple drawings, original diagrams and photographs of the original where possible. The text is simple and straightforward, but Chapter Four deals with the geometrical approach to defences and will require some very careful reading as it gets rather technical, but a glossary at the back helps out.

Everything from hill forts to the Atlantic Wall is covered but one odd omission is the greatest siege of all — that of Malta in 1565. But this does not detract from the main value of the book. It will introduce many to a fascinating facet of military history and it will enable those who already have an interest to place that interest into correct context. This book is well recommended — it won't be the last word on the subject by a long chalk but at £4.95 it will probably be one of the cheapest and easiest to use.

Napoleon's Campaign in Poland 1806-7, by F. Loraine Petre. Arms & Armour Press, 2-6 Hampstead High Street, London NW3. **Price £4.95.**

THIS IS THE latest in A&AP's series of reprints of Petre's historical studies of Napoleon's campaigns, first published around the turn of the century, and will be eagerly welcomed by all students of the Napoleonic Wars and Napoleonic wargamers. Covering the period after the defeat of Prussia at Jena-Auerstadt until the Treaty of Tilsit, it includes not only a meticulous account of the campaigns leading to the bloody battles of Eylau and Friedland, but also chapters on the organisation and composition of the French and Russian forces, their major generals, and the terrain and weather in the theatre of operations.

Illustrated by numerous detailed maps and several engravings, the book's 350+ pages make it excellent value for money.

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Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

HMS Apollo

I READ WITH interest Paul Beaver's article about HMS *Apollo* in the February edition of *Airfix Magazine* and I should like to add the following items of information which may be of interest.

Firstly, HMS *Apollo* carries the same armaments as *Naiad* and later vessels in an 'as completed' state; this comprising a twin Mk VI 4.5-inch mounting, one quadruple launcher for a Sea Cat Surface-to-Air Missile system (not Air-to-Air as stated in the article). Incidentally, the Sea Cat missile system has only a limited anti-ship capability. The armament also comprises two single-barrelled 20 mm Oerlikon guns, one Limbo triple-barrelled anti-submarine mortar and the ship carries a Westland Wasp HAS1 helicopter. The Wasp can carry either: dipping sonar, a pair of Mk 46 light-weight homing torpedoes, or a pair of Nord Aviation AS12 wire-guided Air-to-Surface missiles.

With regard to the paragraph on sensors, the Type 995 radar I have not heard of, but all Leanders in their 'as completed' state, for the Royal Navy, carried a Type 965 single Bedstead Air Early Warning radar on their main mast.

Mention is made of HMS *Apollo* carrying a VDS but her VDS well in the stern appears to be plated over. This has been done in a number of vessels to provide additional accommodation.

The picture at the foot of page 336, caption reads: 'starboard mounting' surely should read 'port mounting' as the picture shows the funnel before the Type 965 on the main mast, ie the bows of the ship were pointing towards the camera.

The 'F4 Squadron' refers to her being a member of the 4th Frigate squadron.

LETTERS TO THE EDITOR

The Sea Wolf Surface-to-Air missile system (this has a Surface-to-Surface capability as well) has been fitted for tests in HMS *Penelope*. The Ikara anti-submarine system has already been fitted in *Leander*, *Galatea*, *Ajax*, *Naiad*, *Aurora* and *Euryalus* and this conversion is to be completed in the *Arethusa* by June 1976. The original armaments in these vessels have been replaced by the Ikara system, two quadruple Sea Cat launchers and two single 40 mm Bofors. In Ikara-fitted ships and *Penelope* the Type 965 radar has been removed to compensate for increased top weight.

The Exocet Surface-to-Surface missile system has been fitted in *Cleopatra* and is at present being fitted in *Phoebe*, *Sirius*, *Dido*, *Argonaut* and *Minerva* and is due to be fitted in *Juno*, starting May 1976, *Danae*, starting June 1976 and the ten broad-beamed vessels.

I hope that the foregoing may be of interest, and use to other readers.
John Walker, Hornchurch, Essex.

PAUL BEAVER REPLIES: when *Naiad* was built along with the earlier *Leanders*, she mounted two single Bofors 40 mm AA guns; the Seacat SAM (GWS 25) launcher being fitted later in the commission after tests on board *Girdle Ness* and *Decoy* or *Diamond*.

Yes, the Seacat system is primarily a SAM system (AAM is a misprint on my part). However many sources including the MoD (Navy) and Jane's Weapons Systems quote the Seacat GWS 25 as being of some SSM value.

Yes, I agree with your extra data on the Wasp and Seawolf, Ikara and Exocet equipped *Leanders*. However, I hope to cover these four 'systems' in later work, this *Apollo* article only being a short account of HMS *Apollo* herself.

With regard to the Type 995 radar, I agree it should have read 'Type 965', *Apollo* being equipped with the AKE-1 variant for AEW — somehow the '6' was inverted in my source

of this data (*Aviation & Marine* magazine), I made the mistake of copying the data directly.

MoD (Navy) in their handbook on HMS *Apollo* cite her as VDS carrying, and I am almost sure that she was equipped at the time of the photograph (August 1975) and the doors being present would seem to bear this out.

My apologies, on further examination of the photograph it is obvious that you are correct, the caption should read 'port mounting'.

Incidentally, I have mistakenly indicated that *Apollo* is the Leader of F4 Squadron (or the Fourth Frigate Squadron, if you prefer) — actually she is the Leader of F2. F4 being HMS *Amazon*'s squadron, the mud-dle came about because I was writing an article on each warship at the same time.

THANKS ALSO to the several other readers who have commented on this last point. Ed.

Gloucester wargames

THE GLOUCESTER Military Modelling and Wargames Society will be holding 'Military Muster 76' at the Technical College, Brunswick Road, Gloucester, from 11 am to 5 pm on Saturday May 1. The show promises to be a good one with masses of trade stands and competition classes, so all readers in the area should make firm diary notes. For further information send an SAE to Rod Gardiner, 48 Manor Park, Longlevens, Gloucester; or for details of wargames competitions to John Patrick, 26 St Aldwyn Street, Gloucester.

DFS 230

MAY I JOIN in the dispute over Terry Wise's 'Sealion' article? Regarding Mr Norris's letter in the February issue, I would like to make the following points.

First, Mr Norris is right on the loading of the DFS 230 — one pilot and nine combat

troops. The Intelligence assessment was that the pilot was not part of the squad he transported, but assigned randomly for a particular mission. This falls in line with the usage of the (later) British Glider Pilot Regiment whose pilots formed a general reserve under HQ control and were not part of the assault squad.

The comments on leaving the glider in a hurry were probably valid in May 1940, but questionable in August. The Luftwaffe considered the early airborne ops as a partial tactical success and held post-mortems to eliminate shortcomings. As a result, changes in distribution of firearms and glider loadings took place. Loading charts of the Crete period show carbines (98K) and SMGs (MP40) as being carried at the seating station, also the 'light' MG34, whose crew sat in stations eight to ten (ie the rear three seats nearest the exit).

Forward-firing weapons: Intelligence reports indicated a single MG34 strapped externally, fired by the occupant of station two (behind the pilot and, need I say it, virtually blind). I can't confirm the single installation but have seen a double MG34 (one above the other) installation on a DFS 230. Provision existed for a gun position above and behind the pilot: the gunner stood on station two seat. The gun was an MG15 on a forward pintle mounting, and could obviously be used to spray a potential landing area. Having flown gliders, I shouldn't fancy that amount of drag on a tricky approach, though!

Close assault landings: Very few of these were made in the short era of the assault glider. Most were against targets where effective infantry fire was absent due to surprise and/or darkness. Those who tried it in daylight in Crete were wiped out by rifle fire and grenades at close quarters. It is worth remembering that the German planners thought the landing area was virtually undefended.

Robert Gibson, Lichfield, Staffs.

RAuxAF

I AM AT present researching for a book about the post-war RAuxAF during the time they were flying Spitfires, ie approximately 1947-49. If any readers could help me with material or photographs I should be grateful to hear from them, and could copy the material loaned and return it the same day. Patrick Smith, Patrick Smith Associates Ltd, 14 Beulah Crescent, Thornton Heath, Surrey CR4 8JL.

I.P.M.S.

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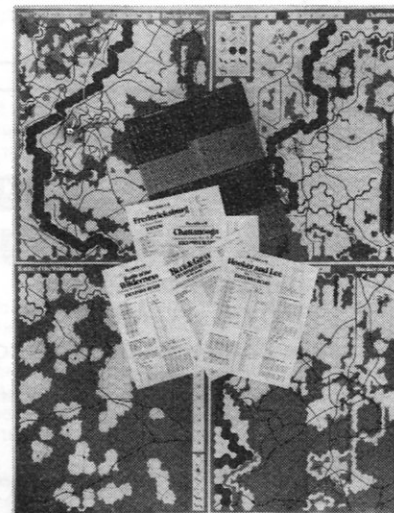
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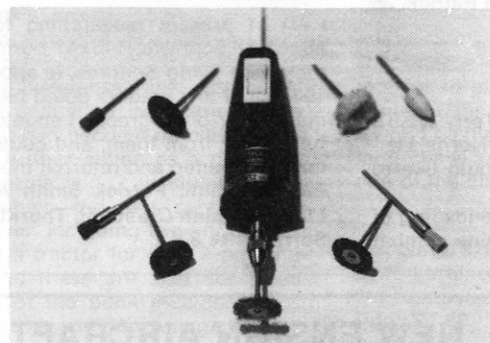
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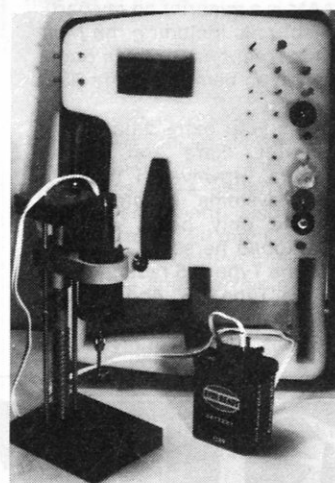
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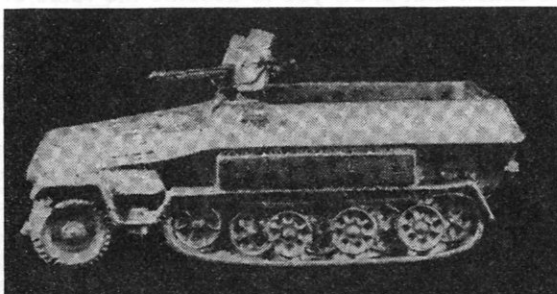
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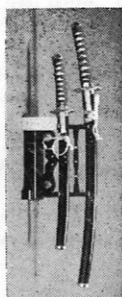
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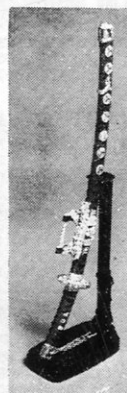
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